



Round baler

Fortima F 1250 (MC)

Fortima V 1500 (MC)

Fortima F 1600 (MC)

Fortima V 1800 (MC)

(from serial no.: 875 576)

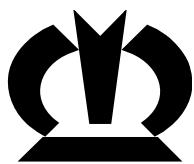
Order no.: 150 000 135 06 en



15.07.2015



Foreword



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 Round Baler**
Typ / Types: **Fortima F 1250 / Fortima F 1250 MultiCut**
Fortima F 1600 / Fortima F 1600 MultiCut
Fortima V 1500 / Fortima V 1500 MultiCut
Fortima V 1800 / Fortima V 1800 MultiCut

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

EG-directive 2006/42/EG (machines) and EG directive 2004/108/EG (EMV).

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

Spelle, 08.05.2014

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

Year of manufacture:

Machine No.:



1 Foreword

Dear Customer!

By purchasing the round baler, you have acquired a quality product from KRONE.

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

It is important to read the operating instructions very carefully before you start operating the machine to allow you to use the round baler to its full capacity.

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 round baler.



Note

In the operating instructions which follow, the round baler 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



Table of Contents

2 Table of Contents

1	Foreword	3
2	Table of Contents	4
3	To this Document	11
3.1	Validity	11
3.2	Further applicable documents	11
3.3	Target group of this document	11
3.4	How to use this document	11
3.4.1	Directories and References	11
3.4.2	Direction Information	12
3.4.3	Term "Machine"	12
3.4.4	Figures	12
3.4.5	Scope of Document	12
3.4.6	Means of representation	12
4	Safety	15
4.1	Purpose of Use	15
4.2	Intended use	15
4.3	Service life of the machine	15
4.4	Basic safety instructions	16
4.4.1	Importance of the operating instructions	16
4.4.2	Personnel qualification	16
4.4.3	Children in danger	17
4.4.4	Connect the machine to the tractor	17
4.4.5	Structural changes to the machine	17
4.4.6	Additional equipment and spare parts	17
4.4.7	Workstations and passengers	17
4.4.8	Operational safety: Technically perfect condition	18
4.4.9	Danger zones	19
4.4.10	Keeping safety devices functional	21
4.4.11	Personal protective equipment	21
4.4.12	Safety signs on the machine	22
4.4.13	Traffic safety	22
4.4.14	Parking the machine safely	23
4.4.15	Consumables	23
4.4.16	Dangers associated with the operational environment	23
4.4.17	Sources of danger on the machine	24
4.4.18	Dangers associated with certain activities: Climbing up and down	25
4.4.19	Dangers associated with certain activities: Work on the machine	25
4.4.20	Dangers associated with certain activities: Working on wheels and tyres	26
4.4.21	Behaviour in hazardous situations and when accidents occur	26
4.5	Safety routines	27
4.5.1	Stopping and securing the machine	27
4.5.2	Supporting lifted machine and machine parts securely	27
4.5.3	Coupling the machine safely	28
4.5.4	Uncoupling the machine safely	28
4.5.5	Preparing the machine for repair, maintenance and adjustment work	29
4.5.6	Starting the machine safely	29



Table of Contents

4.6	Safety stickers on the machine	31
4.6.1	Position and meaning of the safety stickers on the machine.....	31
4.6.2	Re-Ordering the Adhesive Safety and Information Labels	46
4.6.3	Affixing the Adhesive Safety and Information Labels	46
4.6.4	Contact.....	46
4.7	Safety Equipment.....	47
4.7.1	Parking Brake.....	47
4.7.2	Attaching the safety cable	48
4.7.3	Parking Support	49
4.7.4	Wheel chocks.....	50
4.7.5	Secure the machine against the possibility of rolling back.	50
4.7.6	Stop Points.....	51
4.7.7	Lifting Eyes.....	51
4.7.8	Lifting.....	51
4.7.9	Shut-off valve for tailgate	52
4.7.10	Step for working on the linkage.....	53
4.8	Identification Plate	54
4.9	Information Required for Questions and Orders	54
5	Technical data.....	55
5.1	Consumables	60
6	Commissioning.....	61
6.1	Before initial start-up	61
6.2	Assembling the bale ejector	67
6.3	Adjusting the drawbar height.....	72
6.4	PTO shaft	75
6.4.1	Attaching the guard cup for universal shaft	75
6.4.2	Mounting the PTO shaft on the machine side.....	76
6.4.3	Length adjustment.....	79
6.5	Hose holder assembly.....	80
6.5.1	Net brake.....	81
6.6	Attaching the Triangle Spotlights	81
7	Start-up.....	82
7.1	Connect the machine to the tractor	83
7.2	Hydraulics.....	84
7.2.1	Special Safety Instructions.....	84
7.2.2	Connecting the hydraulic lines	85
7.3	Hydraulic brake (Export)	87
7.4	Hydraulic brake (auxiliary brake).....	87
7.4.1	Install the PTO shaft.....	88
7.5	Compressed Air Connections for the Compressed Air Brake.....	90
7.6	Electrical connections	91
7.6.1	Connecting the terminal (on tractors without ISOBUS system).....	92
7.6.2	Connecting the Terminal (on tractors with integrated ISOBUS system).....	93
7.7	Using the safety chain	94
8	KRONE Medium Operation Panel	96
8.1	Overview	96
8.2	Switching Operation Panel ON/OFF	97
8.3	Net Tying / Twine Tying	97



Table of Contents

8.3.1	Selecting Net Tying or Twine Tying	97
8.3.2	Setting the Number of Net Layers.....	98
8.3.3	Setting the Number of Twine Wraps	99
8.4	Operating Bale Counter	100
8.5	Switching between Zero Setting of Blades Operation and Pick-up Operation	101
8.6	Displaying Baling Pressure	102
8.7	Starting Tying	103
8.8	Testing Sensors for Bale Firmness	105
9	KRONE operation terminal Beta	106
9.1	Attachment of control unit	107
9.1.1	Connecting Control Unit.....	107
9.2	Description of the keys	108
9.3	Operational Readiness.....	109
9.4	Basic Screen	110
9.4.1	Functions of Keys 1 - 3	110
9.5	Selecting manual or automatic mode.....	111
9.5.1	Selecting Pick-up or Blade Base.....	111
9.5.2	Displays in the Main Window	112
9.5.3	Messages.....	114
9.5.4	Setting Bale Firmness.....	115
9.5.5	Setting Bale Diameter	116
9.6	Menu Level.....	117
9.6.1	Short overview	117
9.6.2	Bringing up a Menu Level	118
9.7	Main menu 1 "Settings"	119
9.7.1	Menu 1-1 "Contrast"	120
9.7.2	Menu 1-3 "Number of Net Winds"	121
9.7.3	Menu 1-4 „Sensitivity of Direction Display“	122
9.7.4	Menu 1-5 "Pre-Signalling"	124
9.7.5	Menu 1-6 "Correction Filling"	126
9.7.6	Menu 1-7 "Select type of tying"	128
9.7.7	Menu 1-8 "Number of Twine Wraps".....	129
9.7.8	Menu 1-8-1 „Inserting Twine Wraps"	130
9.7.9	Menu 1-8-3 „Cutting Off Twine Wraps "	131
9.7.10	Menu 1-9 "Tying Start Delay"	132
9.8	Main menu 2 "Counters"	133
9.8.1	Menu 2-1 "Customer counters"	134
9.8.2	Menu 2-2 "Total bale counter"	136
9.9	Main menu 3 „Manual operation“	138
9.10	Main menu 4 "Service"	140
9.10.1	Menu 4-2 "Manual Sensor Test"	141
9.10.2	Menu 4-4 "Manual Actuator Test"	146
9.11	Main menu 5 "Info"	149
9.12	Main Menu 6 „Technician“.....	150
9.13	Alarm messages.....	151
9.13.1	Note and messages	152
9.13.2	Physical messages	153
9.13.3	General Messages.....	154
10	KRONE ISOBUS Terminal.....	155



Table of Contents

10.1	Installing the terminal into cabin.....	156
10.2	ISOBUS Short Cut Button	157
10.2.1	Display / Touchscreen	158
10.2.2	Switching the terminal on / off when the machine is not connected	159
10.2.3	Switching the terminal on / off when the machine is connected	160
10.3	Basic Screen	161
10.3.1	Setting the Setpoint Bale Firmness.....	164
10.3.2	Setting the Target Bale Diameter.....	165
10.4	Messages	166
10.5	Menu Level.....	167
10.5.1	Short Overview.....	167
10.5.2	Calling up the menu level.....	168
10.6	Main Menu 1 „Settings“	169
10.6.1	Menu 1-3 "Number of net winds"	170
10.6.2	Menu 1-4 "Sensitivity of direction display"	171
10.6.3	Menu 1-5 „Pre-Signalling"	172
10.6.4	Menu 1-6 „Filling Correction"	174
10.6.5	Menu 1-7 "Select type of tying"	176
10.6.6	Menu 1-8 „Number of Twine Wraps"	177
10.6.7	Menu 1-9 „Tying Start Delay"	178
10.7	Main menu 2 "Counters"	179
10.7.1	Menu 2-1 „Customer Counter“	180
10.7.2	Menu 2-2 „Total Bale Counter“	182
10.8	Main menu 3 "Manual operation"	183
10.8.1	Menu 3-2 "Position of net motor"	184
10.9	Main menu 4 "Service"	185
10.9.1	Menu 4-2 "Manual sensor test"	186
10.9.2	Menu 4-4 Manual actuator test	192
10.10	Main Menu 5 „Information“	196
10.11	Main Menu 6 Technician	197
10.12	Main Menu 7 ISOBUS.....	198
10.12.1	Menu 7-1 Virtual Terminal (VT).....	199
10.12.2	Menu 7-1-1 Select day/night display lighting	200
10.12.3	Menu 7-1-4 Switch to different terminal	201
10.13	Menu 7-4 ISOBUS Diagnostics.....	202
10.13.1	Menu 7-4-2 Diagnostics Auxiliary Functions (AUX).....	203
10.14	Alarm messages.....	204
10.14.1	Acoustic warnings	205
10.14.2	Note and messages	206
10.14.3	Physical messages	207
10.14.4	General Messages.....	208
11	ISOBUS operation	209
11.1	Mounting ISOBUS Terminal.....	210
11.1.1	Connection Terminal to Tractor	210
11.1.2	Connection Tractor to Machine.....	210
11.2	Differing functions to KRONE ISOBUS terminal CCI.....	211
11.3	ISOBUS „Auxiliary“-function (AUX)	212
11.3.1	Example of joystick assignment for Fendt (default setting)	213
12	Driving and Transport.....	214



Table of Contents

12.1	Preparations for road travel.....	215
12.1.1	Raise the pick-up	215
12.1.2	Checking the parking support	216
12.1.3	Checking the lighting system	216
12.2	Parking	217
12.2.1	Secure the machine against the possibility of rolling back.	217
12.2.2	Lowering the parking support.....	218
12.2.3	Disconnecting the PTO shaft from the tractor.....	218
12.2.4	Disconnecting the supply lines.....	219
13	Operation.....	221
13.1	Settings Before Starting Work.....	222
13.2	Travelling speed.....	223
13.3	Filling the Bale Chamber.....	224
13.3.1	Installing additional discharge plates in the tailgate.....	225
13.4	Wrapping and Depositing Bales.....	226
13.5	After Baling.....	226
13.6	Splash guard	227
13.7	Pick-up	228
13.7.1	Default Setting (Working Height Setting)	228
13.7.2	Shear Screw for Pick-up Drive.....	230
13.8	Roller crop guide	231
13.9	Adjusting the baffle plate.....	232
13.10	Setting Baling Pressure.....	233
13.11	Cutting system.....	235
13.11.1	General Aspects.....	235
13.11.2	Cutting length	236
13.11.3	Zero Setting of Blades	239
13.11.4	Blade Quick-Fit Device	241
13.11.5	Adjust blade control shaft.....	243
13.11.6	Zero position of the cutter	245
13.12	Removing the Crop Blockages in the Crop Collection Area	250
13.12.1	Crop blockage under feed rotor/cutting rotor	250
13.12.2	Crop blockage at pick-up	254
13.13	Reversing	255
13.14	Assembly and disassembly of the bale ejector	257
13.15	Floor conveyor chain.....	259
13.16	Double Twine Tying (Medium Operation Panel)	260
13.16.1	Overview	260
13.16.2	Function of Tying.....	261
13.16.3	Setting the tying twine in place	262
13.17	Quadruple Twine Tying (operation terminal Beta, ISOBUS terminal).....	266
13.17.1	Overview	266
13.17.2	Function of Tying.....	267
13.17.3	Setting the tying twine in place	268
13.18	Net Wrapping	274
13.18.1	Net wrapping parts.....	274
13.18.2	Inserting Net Roll.....	275
14	Settings	279
14.1	Tying unit.....	280



Table of Contents

14.1.1	Setting the Twine Brake	280
14.1.2	Adjusting the twine brake	281
14.1.3	Loosening the twine brake	282
14.1.4	Adjusting the idler roller	283
14.1.5	Adjusting the sensor.....	283
14.1.6	Adjusting the net brake	284
14.1.7	Adjusting the additional net brake.....	285
14.1.8	Loosening the net brake	286
14.1.9	Net spreader	286
14.1.10	Adjusting the Magnetic Coupling (in Case of Twine Wrapping)	287
14.2	Central chain lubrication system	288
14.2.1	Display Central Chain Lubrication System	291
14.3	Adjusting the Automatic Floor Conveyor Stop	293
14.3.1	Adjusting the switching time.....	294
15	Maintenance.....	295
15.1	Spare Parts	295
15.2	Overview	296
15.3	Setting Tailgate Lock.....	297
15.3.1	Setting Lock Hook Stop	298
15.4	Setting Cutting Blade of Net Tying Device.....	299
15.4.1	Adjusting the cutting blades of the net wrap system.....	299
15.5	Setting Scraper Rail to Upper Spiral Roller.....	300
15.6	Setting Spring Rail.....	301
15.7	Setting Baling Pressure Indicator.....	302
15.7.1	Aligning Both Baling Pressure Indicators to Each Other	302
15.7.2	Setting Baling Pressure Indicator with Closed Tailgate	303
15.8	Grinding blades	304
15.9	Sensors	305
15.9.1	Position of the Sensors	305
15.9.2	Settings Sensors	309
15.9.2.1	Namur Sensor d = 18 mm*	309
15.9.2.2	Namur sensor d = 12 mm	309
15.9.3	Central Position of Engine Sensor	310
15.9.4	Sensor Position Blade Shaft (Machines with Cutting Device)	311
15.9.5	Sensor Net Tying Mechanism.....	312
15.9.6	Bale Firmness Sensor.....	313
15.10	Tightening torques.....	314
15.10.1	Metric Thread Screws with Control Thread	314
15.10.2	Metric Thread Screws with Fine Thread	315
15.10.3	Metric Thread Screws with Countersunk Head and Hexagonal Socket.....	315
15.11	Drawbar.....	316
15.11.1	Hitches on the Drawbar	316
15.12	Main gearbox.....	317
15.12.1	Oil Level Check and Oil Change on Main Gearbox	317
15.12.2	Oil Level Check and Oil Change Intervals (Gearboxes)	318
15.13	Drive chains.....	319
15.13.1	Tensioning the Drive Chains.....	319
15.14	Cleaning the Tensioning Arm Floor Conveyor Rear	326
15.15	Shortening the floor conveyor chain.....	327



Table of Contents

15.16	Tyres	329
15.16.1	Checking and maintaining tyres	330
15.16.2	Tyre air pressure	331
15.17	Brakes	333
15.17.1	Checking the brake setting	333
15.17.2	Adjusting the cam brake	334
15.18	Maintenance – brake system (special equipment)	337
15.18.1	Coupling heads (non-interchangeable)	338
15.18.2	Air filter for pipelines	339
15.18.3	Compressed-air reservoir	340
15.19	Hydraulics	341
15.19.1	Shut-off valve for tailgate	342
15.19.2	Control block	343
15.19.3	Emergency Manual Activation Electromagnetic Valves (MC Cutting System)	344
15.19.4	Replacing the Hydraulic Oil Filter	345
16	Maintenance – lubrication	347
16.1	Special Safety Instructions	347
16.2	Lubricants	348
16.3	General aspects	348
16.4	Lubricating the PTO shaft	348
16.5	Lubrication points	349
16.5.1	Chain Lubrication System	355
17	Placing in Storage	356
17.1	At the End of the Harvest Season	356
17.2	Before the Start of the New Season	357
17.2.1	Maintenance work before the beginning of the new season	358
17.2.2	Venting the overload coupling on the PTO shaft	359
18	Malfunctions - Causes and Remedies	360
18.1	Special Safety Instructions	360
18.2	General malfunctions	361
18.3	Malfunctions on the central chain lubrication system	364
18.4	Error Messages of KRONE Operation Terminal	365
19	Disposal of the machine	366
19.1	Disposal of the machine	366
20	Appendix	367
20.1	Diagram	367
20.2	Circuit Diagram	369
21	Index	370

3 To this Document

3.1 Validity

These operating instructions are valid for round balers of types:

Fortima F 1250 (MC)

Fortima V 1500 (MC)

Fortima V 1600 (MC)

Fortima V 1800 (MC)

3.2 Further applicable documents

To ensure that the machine is used safely and as intended, observe the following further applicable documents:

Part designation	Document type
Universal shaft	Operating instructions
Operation terminal Beta	Operating instructions
CCI terminal (optional)	Operating instructions
WTK joystick (optional)	Operating instructions

3.3 Target group of this document

This document is intended for the farmer and for other users who have no agricultural training but who have been instructed in the use of the machine.

3.4 How to use this document

3.4.1 Directories and References

Table of contents/headers:

The table of contents as well as the headers in this instruction are used for quick navigation in the chapters.

Index directory:

In the index directory, you can find information on the desired subject via catchwords which are in alphabetical order. The index directory can be found on the last page of this instruction.

Cross references:

Cross references to another place in the operating instructions or to another document are in the text and specify the chapter and subchapter or section. The designation of subchapters or sections is presented in quotation marks.

Example:

Check that all screws on the machine are tight, refer to chapter Maintenance, "Tightening Torques".

The subchapter or the section can be found via an entry in the table of contents and in the index directory.



To this Document

3.4.2 Direction Information

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

3.4.3 Term “Machine”

Throughout the rest of this document, the “round baler” will also be referred to as the “machine”.

3.4.4 Figures

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

3.4.5 Scope of Document

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

3.4.6 Means of representation

Icons in the text

In this document, the following means of representation are used:

Action step

A bullet point (•) designates an action step you have to perform, as for example:

- Set the left outside mirror.

Sequence of actions

Several bullet points (•) located in front of a sequence of action steps identify a sequence of actions to be performed step by step, as for example:

- Loosen counter nut.
- Set the screw.
- Tighten counter nut.

List

Dashes (-) identify lists such as, for example:

- Brakes
- Steering
- Lighting

Symbols in figures

To visualize parts and actions steps, the following icons are used:

Icon	Explanation
	Reference sign for part
	Position of a part (e.g. move from pos. I to pos. II)
	Dimensions (e.g. B = width, H = height, L = length)
	Action step: Tighten screws with torque key with specified tightening torque
	Direction of motion
	Direction of travel
	opened
	closed
	enlargement of display detail
	Framings, dimension line, dimension line limitation, reference line for visible parts or visible mounting material
	Framings, dimension line, dimension line limitation, reference line for covered parts or covered mounting material
	Laying routes
	Left-hand machine side
	Right-hand machine side

To this Document

Warning signs

Warning

**WARNING! - Type and source of hazard!**

Effect: Injuries, serious material damage.

- Measures for hazard prevention.

Caution

**CAUTION! - Type and source of hazard!**

Effect: Damage to property.

- Measures for risk prevention.

Notes with information and recommendations

Note

**Note**

Effect: Economic benefit of the machine.

- Measures to be performed.

4 Safety

4.1 Purpose of Use

Round balers Fortima F 1250 (MC)/F 1600 (MC) and Fortima V 1500 (MC)/V 1800 (MC) are pick-up balers. They compact agricultural material such as hay, straw or grass silage into round bales.

The round balers Fortima F 1250 (MC)/F 1600 (MC) are equipped with a fix bale chamber. The fix bale chamber of Fortima F 1250 (MC) enables baling of round bales with a diameter of approx. 1.25 m; whereas the bale chamber of Fortima F 1600 (MC) enables baling with a diameter of approx. 1.55 m.

The round balers Fortima V 1500 (MC) and V 1800 (MC) are equipped with a variable bale chamber.

The variable bale chamber of Fortima V 1500 (MC) enables baling of round bales with a diameter of approx. 1.00 - 1.50 m; the variable bale chamber of Fortima V 1800 (MC) enables baling with a diameter of approx. 1.00 - 1.80 m.

The width of the round bales amounts to 1.20 m. The round balers are equipped with quadruple twine tying (with magnetic coupling) and/or net wrapping systems.



WARNING! – Intake and baling of crops not mentioned!

Effect: Damage to the machine

Collecting and baling materials that are not cited here is permitted only in agreement with the manufacturer. The basic requirements in any case are swathing of the crops and automatic intake by the pick-up as it passes over them.

4.2 Intended use

The round baler is built exclusively for customary use in agricultural work (intended use).

Unauthorised modifications to the machine may have a negative effect on the machine characteristics or safe and reliable use of the machine or may interfere with proper operation. Unauthorised modifications shall therefore release the manufacturer of any liability for consequential damage.

4.3 Service life of the machine

- The service life of this machine strongly depends on proper use and maintenance as well as the operating conditions.
- Permanent operational readiness as well as long service life of the machine can be achieved by observing the instructions and notes of these operating instructions.
- After each season of use, the machine must be checked thoroughly for wear and other damage.
- Damaged and worn parts must be replaced before placing the machine into service again.
- After the machine has been used for five years, carry out full technical inspection of the machine. According to the results of this inspection, a decision concerning the possibility of reuse of the machine should be taken.
- Theoretically, the service life of this machine is unlimited as all worn or damaged parts can be replaced.

Safety

4.4 Basic safety instructions

Non-compliance with the safety instructions and warnings

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

4.4.1 Importance of the operating instructions

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

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

- Before using the machine for the first time, read and follow all the "Basic safety instructions" in the chapter Safety.
- Before working, also read and observe the respective sections in the operating instructions.
- Retain the operating instructions and ensure that they are always available.
- Hand over the operating instructions to subsequent users.

4.4.2 Personnel qualification

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

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

4.4.3 Children in danger

Children cannot assess danger and behave unpredictably. As a result, children are especially at risk.

- Keep children away from the machine.
- Keep children away from consumables.
- Especially before starting up and moving the machine, ensure that there are no children in the danger zone.

4.4.4 Connect the machine to the tractor

If the tractor and the machine are not correctly connected, there is a risk of causing serious accidents.

- When connecting front attachments or trailers, follow all operating instructions:
 - The operating instructions for the tractor
 - The operating instructions for the machine
 - The operating instructions for the universal shaft
- Follow the coupling instructions, see chapter on starting up "Connect the machine to the tractor".
- Note the modified driving behaviour of the combination.

4.4.5 Structural changes to the machine

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

- Have structural changes and enhancements performed by an authorised service centre only.

4.4.6 Additional equipment and spare parts

Additional equipment and spare parts, which do not comply with the requirements of the manufacturer, may impair the operational safety of the machine and cause accidents.

- To ensure operational safety, use original or standard parts which comply with the requirements of the manufacturer. If in doubt, have parts verified by the dealer or manufacturer.

4.4.7 Workstations and passengers

Control of the moving machine

The moving machine requires the driver to react quickly at any time. Otherwise, the machine may move in an uncontrolled manner and seriously injure or kill people.

- Start the engine from the driver's seat only.
- Never leave the driver's seat while the machine is moving.
- Never climb in or out of the machine while it is moving.

Passengers

Passengers may be seriously injured by the machine or fall off the machine and get run over. Ejected objects may strike and injure passengers.

- Never let people ride on the machine.

Safety

4.4.8 Operational safety: Technically perfect condition

Operation only when the machine has been started up correctly

If the machine is not started up correctly according to these operating instructions, the operational safety of the machine is not ensured. As a result, accidents may occur and people may be seriously injured or killed.

- Do not use the machine unless it has been started up correctly, see chapter Start-up.

Technically perfect condition of the machine

Improper maintenance and adjustment may affect the operational safety of the machine and cause accidents. As a result, people may be seriously injured or killed.

- Perform all maintenance and adjustment work according to the chapters Maintenance and Adjustment.
- Before performing any maintenance or adjustment work, shut down and safeguard the machine, see chapter Safety "Shutting down and safeguarding the machine".

Danger resulting from damage to the machine

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

- Brakes
- Steering
- Safety devices
- Connecting devices
- Lighting
- Hydraulic system
- Tyres
- Universal shaft

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

- Shut down and safeguard the machine, see chapter Safety, "Shutting down and safeguarding the machine".
- Immediately eliminate potential causes of damage, for example heavy soiling, or tighten slack screws.
- Determine the cause of damage according to these operating instructions, see chapter Malfunctions – Cause and remedy.
- If possible, repair the damage according to these operating instructions.
- In the case of damage which may affect operational safety and cannot be repaired according to these operating instructions: Have damage repaired by a qualified service centre.

Technical limit values

When the technical limit values of the machine are not met, the machine may be damaged. Thus there is a risk of accidents, serious injuries or death. With regard to safety, it is of special importance to comply with the following technical limit values:

- Gross vehicle weight
- Maximum axle loads
- Maximum load capacities
- Maximum trailing load
- Maximum supported load
- Maximum transport height
- Maximum permissible speed
- Comply with limit values, refer to chapter "Technical Data".

4.4.9 Danger zones**Danger zones on the tractor and the machine**

The area around the tractor and the machine is a danger zone.

There are the following hazards in this danger zone:

- The tractor and the machine may start moving or rolling away and run over people.
- If the power lifter is unintentionally actuated, the machine may make hazardous movements.
- Defective or insecurely attached electrical cables may cause fatal electric shocks.
- Defective or insecurely attached hydraulic or pneumatic lines may become detached and flail around. Hydraulic oil may escape under high pressure and cause serious injuries to the skin or face.
- Clothing may become caught and wrapped around an exposed PTO shaft or a damaged or incorrectly installed universal shaft.
- When the drive is switched on, machine parts may rotate or swivel.
- Hydraulically raised machine parts may descend unnoticed and slowly.

If the danger zone is not observed, people may be seriously injured or killed.

- Keep people away from the danger zone of the tractor and the machine.
- Do not switch on the drives and engine until there is nobody in the danger zone.

The safety clearance is:

- 3 metres on either side of the machine.
- 5 metres behind the machine.
- Before working in front of and behind the tractor and in the danger zone of the machine: •
Shut down and safeguard the machine, see chapter Safety, "Shutting down and safeguarding the machine". This also applies to brief inspection work. Many serious accidents in front of and behind the tractor and the machine occur due to negligence and running machines.
- Consider the information in all relevant operating instructions.
 - The operating instructions for the tractor
 - The operating instructions for the machine
 - The operating instructions for the universal shaft

Safety

Danger zone between tractor and machine

People standing between the tractor and machine may be seriously injured or killed if the tractor rolls away or by machine movements:

- Before starting all work between the tractor and machine: • Shut down and safeguard the machine, see chapter Safety, "Shutting down and safeguarding the machine". This also applies to brief inspection work. Many serious accidents occur due to negligence and running machines.
- If the power lifter has to be actuated, keep all people away from the area of movement of the power lifter.

Danger zone when drive switched on

When the drive is switched on, there is a danger to life from rotating and swivelling machine parts. There must be nobody in the danger zone of the machine.

- Before starting the machine, direct all people out of the danger zone of the machine.
- If a hazardous situation arises, switch off drives and diesel engine immediately.

Danger zone of the P.T.O. shaft

People may be caught, pulled in and seriously injured by the PTO shaft and the driven components.

Before engaging the PTO shaft:

- Make sure that all safety devices are fitted and in the protection position.
- Ensure that the selected speed and direction of rotation of the PTO shaft match the permitted speed and direction of rotation of the machine.
- Ensure that nobody is in the danger zone of the PTO shaft or the universal shaft.
- If the angles are too large, switch off the PTO shaft. The machine may be damaged. Parts may be flung out and cause injury to persons.
- If the PTO shaft is not required, switch off the PTO shaft.

Danger zone universal shaft

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

- Ensure that the universal shaft guards are attached and functional.
- Ensure that nobody is in the danger zone of the PTO shaft or the universal shaft.
- Provide the section tube and universal shaft guards with adequate cover.
- Allow the universal shaft locks to engage.
- Attach the chains to prevent the universal shaft guards from rotating with the shaft.
- Follow the operating instructions for the universal shaft.

Risk of injury due to machine parts that continue to run

After switching off the drives, the following machine parts continue to run:

- Universal shaft
- Drive chains
- Pick-up
- Net rolls
- Floor conveyor
- Wrapper

If machine parts continue to run, persons may be seriously injured or killed.

- Stop and secure the machine, refer to chapter Safety “Stopping and Securing the Machine”.
- Only touch machine parts when they are at a standstill.

4.4.10 Keeping safety devices functional

If safety devices are missing or damaged, people may be seriously injured or killed by moving machine parts.

- Replace damaged safety devices.
- Re-install all removed safety devices and all other parts and move them into protective position before starting up the machine.
- If it is doubtful whether all safety devices have been correctly installed and are functional, have a service centre check them.

4.4.11 Personal protective equipment

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

Personal protective equipment is for example:

- Work gloves
- Safety boots
- Close-fitting protective clothing
- Hearing protection
- Safety glasses
- Specify and provide personal protective equipment for the particular job.
- Use only personal protective equipment which is in proper condition and offers effective protection.
- Adjust personal protective equipment to the person, for example the size.

Safety

Wear suitable clothing

Loose clothing increases the risk of it becoming caught or wrapped around rotating parts and of it becoming caught on protruding parts. As a result, people may be seriously injured or killed.

- Wear tight-fitting clothing.
- Never wear rings, chains or other items of jewellery.
- Cover long hair with a hairnet.
- Wear sturdy shoes or protective work boots.

4.4.12 Safety signs on the machine

Safety stickers on the machine warn of hazards in danger areas and are an important component of the safety equipment of the machine. Missing safety stickers increase the risk of serious and fatal injuries.

- Clean dirty safety stickers.
- After cleaning, always check that safety stickers are complete and legible.
- Immediately replace missing, damaged and unrecognisable safety stickers.
- Provide spare parts with the designated safety stickers.

Description, explanation and order numbers of the safety stickers, see chapter Safety, "Safety stickers on the machine".

4.4.13 Traffic safety

Dangers when driving on roads and in fields

The attached or coupled work machine changes the handling characteristics of the tractor. The handling characteristics are also dependent on the operational state, the filling or loading and on the ground condition. If the driver does not consider changed handling characteristics, he may cause accidents.

- Observe procedures for driving on roads and in fields, see chapter "Driving and transportation".

Prepare the machine for road travel

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

- Before travelling on the road, always prepare the machine for road travel, see chapter Driving and transportation, "Preparations for road travel".

Danger of overturning

The machine may overturn when driving on slopes. As a result, accidents may occur and people may be seriously injured or killed. The risk of overturning depends on many factors.

- Observe procedures for driving, see chapter Driving and transportation.



4.4.14 Parking the machine safely

The parked machine may overturn. People may be crushed and killed.

- Park the machine on a stable and even surface.
- Before adjusting, repairing, servicing or cleaning the machine, ensure that it is securely positioned. If in doubt, support the machine.
- In the chapter Driving and transportation note the section "Parking the machine".

Unattended parking

Adults and children are at risk from an inadequately secured and unattended parked machine with or without a connected front attachment or trailer.

- Before leaving the machine: Shut down and safeguard the machine, see chapter Safety, "Shutting down and safeguarding the machine".

4.4.15 Consumables

Unsuitable operating materials

Operating materials that do not correspond to the requirements of the manufacturer may impair the operational safety of the machine and cause accidents.

- Only use operating materials that meet manufacturer requirements.

Protection of the environment and disposal

Consumables such as diesel fuel, brake fluid, antifreeze and lubricants may damage the environment and the health of people.

- Do not release consumables into the environment.
- Absorb leaked consumables with an absorbent material or with sand, place in a liquid-tight labelled container and dispose of according to the official regulations.

4.4.16 Dangers associated with the operational environment

Danger of fire

Combustible materials can accumulate in the machine due to operation or animals such as rodents or nesting birds. The danger of soiling applies in particular when working in dry or turbulent conditions.

Dust, soiling and harvest residues can ignite on hot parts and cause fires that can seriously injure or kill persons.

- Check and clean the machine every day before using it for the first time.
- Regularly check and clean the machine during the working day.
- Keep the fire extinguisher ready to use at all times.

Safety

4.4.17 Sources of danger on the machine

Noise may lead to health problems

When working with the machine for a longer time, serious health damage may result such as hearing loss, deafness or tinnitus. When using the machine at high speed, the noise level increases as well.

- Before starting up the combination of tractor and machine, evaluate the danger by noise. Determine and use hearing protection that is suitable depending on environmental conditions, working hours as well as working conditions and operating conditions of the machine. In this process, observe sound pressure level, refer to chapter Technical Data.
- Define rules for the utilization of hearing protection and for working time.
- When the machine is in operation, keep windows and doors of the cab closed.
- Remove hearing protection for road travel.

Liquids under pressure

The following liquids are under high pressure:

- Hydraulic oil

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

- If a damaged pressure system is suspected, immediately contact a qualified service centre.
- Never search for leaks with bare hands. Even a pin-sized hole may cause serious injuries.
- Keep body and face away from leaks.
- If liquids penetrate the body, immediately consult a doctor. The liquid must be removed from the body as quickly as possible. Danger of infection!

Hot liquids

Risk of burns and scalding from hot liquids!

- When draining hot consumables, wear protective gloves.
- If required, leave liquids and machine parts to cool down before performing repair, maintenance and cleaning work.

A damaged compressed air system may damage your health

Damaged compressed air hoses in the compressed air system may cause hoses to tear off. Flailing hoses may cause serious injuries.

- If it is suspected that the compressed air system is damaged, immediately contact a service centre.

4.4.18 Dangers associated with certain activities: Climbing up and down

Climbing up and down safely

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

Dirt as well as operating fluids and lubricants may cause you to lose your footing.

- Always keep the steps and platforms clean and in a proper condition to prevent people from losing their footing.
- Never climb up and down while the machine is moving.
- Face the machine when climbing up and down.
- When climbing up and down, maintain a three-point contact with the steps and hand rails (always two hands and one foot or two feet and one hand on the machine).
- When climbing up and down, never use the controls as handles. Inadvertent activation of the controls may cause functions to be unintentionally actuated which could be hazardous.
- When climbing down, never jump off the machine.
- Climb up and down using only the steps and platforms designated in these operating instructions, see chapter Description of machine, "Ladders".

4.4.19 Dangers associated with certain activities: Work on the machine

Work on the machine only when it has been shut down

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

- Before performing any work on the machine, such as making adjustments, cleaning, preparing for road travel, preparing for work, servicing or rectifying malfunctions, shut down and safeguard the machine, see chapter Safety "Shutting down and safeguarding the machine".

Maintenance and repair work

Incorrect maintenance and repair work will endanger operational safety. As a result, accidents may occur and people may be seriously injured or killed.

- Only perform work which is described in these operating instructions. Before performing any work, shut down and safeguard the machine, see chapter Safety, "Shutting down and safeguarding the machine".
- All other maintenance and repair work may be performed by a qualified service centre only.

Raised machine and machine parts

The raised machine may accidentally drop, roll away or overturn and crush or kill people.

- Do not stand under the raised machine. First put the machine down.
- Before performing any work under the machine, securely support the machine, see chapter Safety "Securely supporting the raised machine and machine parts".
- Before performing any work on or under raised machine parts, lower the machine parts or secure them mechanically with rigid safety supports or with a hydraulic shut-off device to prevent them from dropping.

Safety

Danger associated with welding work

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

- Before performing welding work on the machine, obtain the consent of KRONE customer service and, if required, identify alternatives.
- Have welding work performed by experienced technicians only.

4.4.20 Dangers associated with certain activities: Working on wheels and tyres

Fitting/removing wheels and tyres

Improper fitting or removal will endanger operational safety. As a result, accidents may occur and people may be seriously injured or killed.

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

- If there is a lack of knowledge, have the wheels and tyres fitted by the KRONE dealer or by a qualified tyre service.
- When fitting tyres on the wheel rims, never exceed the maximum permitted pressure specified by the tyre manufacturers, otherwise the tyre or even the wheel rim may explode.
- When fitting the wheels, tighten the wheel nuts to the stipulated torque, see chapter Maintenance "Tyres".

4.4.21 Behaviour in hazardous situations and when accidents occur

Neglected or incorrect procedures in hazardous situations may obstruct or prevent the rescue of people in danger. Difficult rescue conditions will impair the chances of helping and healing the injured.

- In principle: Switch off the machine.
- Gain an overview of the hazardous situation and identify the cause of the hazard.
- Safeguard the accident location.
- Rescue people from the danger zone.
- Withdraw from the danger zone and do not enter again.
- Alert rescue teams and, if possible, fetch help.
- Take immediate life-saving measures.

4.5 Safety routines

4.5.1 Stopping and securing the machine

**WARNING!****Crush hazard due to movement of the machine or machine parts!**

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

- Before leaving the machine: Shut down and secure the machine.

To park the machine securely:

- Park the machine on a stable and even surface.
- Switch off the drives and wait until coasting parts have come to a standstill.
- Switch off the tractor engine, remove the ignition key and take it with you.
- Use the parking brakes to secure the machine and tractor from rolling away.

4.5.2 Supporting lifted machine and machine parts securely

**WARNING!****Risk of injury due to movement of the machine or machine parts**

If the machine is not supported securely, the machine or machine parts may roll, fall or drop. As a result, people may be seriously injured or killed.

- Before working on or under raised components: Securely support machine or machine parts.

To securely support the machine or machine parts:

- Shut down and safeguard the machine, see chapter Safety, "Shutting down and safeguarding the machine".
- Before performing any work on or under raised machine parts, lower the machine parts or secure them mechanically with rigid safety supports (e.g. support stand, crane) or with a hydraulic shut-off device (e.g. stop cock) to prevent them from dropping.
- Never support the machine or machine parts with materials which can buckle.
- Never support the machine or machine parts with hollow blocks or bricks. Hollow blocks or bricks may break under continuous load.
- Never work under the machine or machine parts which are held up by a car jack.

Safety

4.5.3 Coupling the machine safely



WARNING!

Risk of injury when coupling the machine

The machine or machine parts may move unintentionally while the machine is coupled to the tractor. As a result, people may be seriously injured or killed.

- When coupling the machine, perform the following steps:
- Never stand between the tractor and the machine while coupling the machine to the tractor.
- Depressurise the tractor hydraulics.
- Switch off the electronic systems.
- Shut down and safeguard the machine, see chapter Safety, "Shutting down and safeguarding the machine".
- Only couple the hydraulic hoses if the hydraulic systems on the tractor and the machine are depressurised.
- Couple the compressed air braking system, depending on the version of the machine.
- Couple the hydraulic brake, depending on the version of the machine.
- Couple and secure the universal shaft.
- Connect the lighting cable.
- Connect the power cable.
- Connect the terminal.

4.5.4 Uncoupling the machine safely



WARNING!

Risk of injury when uncoupling the machine

The machine or machine parts may move unintentionally while the machine is being uncoupled. As a result, people may be seriously injured or killed.

- When uncoupling the machine, perform the following steps:
- Shut down and safeguard the machine, see chapter Safety, "Shutting down and safeguarding the machine".
- Lower the support jack.
- Depressurise the tractor hydraulics.
- Switch off the electronic systems.
- Only uncouple the hydraulic hoses if the hydraulic systems on the tractor and the machine are depressurised.
- Uncouple the compressed air brake, depending on the version of the machine.
- Uncouple the hydraulic brake, depending on the version of the machine.
- Disconnect the lighting cable from the tractor.
- Disconnect the power cable from the tractor.
- Uncouple the universal shaft and place it on the holder provided.
- Never stand between the tractor and the machine when uncoupling the machine from the tractor.

4.5.5 Preparing the machine for repair, maintenance and adjustment work

**WARNING!****Risk of injury during repair, maintenance and adjustment work on the machine.**

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

If the machine is not supported securely, the machine or machine parts may roll, fall or drop. As a result, people may be seriously injured or killed.

- Before starting repair, maintenance and adjustment work, perform the following steps:

- Shut down and safeguard the machine, see chapter Safety, "Shutting down and safeguarding the machine".
- The raised machine or machine parts must be securely supported, see chapter Safety "Securely supporting the raised machine and machine parts".

4.5.6 Starting the machine safely

**WARNING!****Risk of injury when starting up the machine**

If the machine has not been safely placed in operation, the machine or machine parts may move unintentionally. As a result, people may be seriously injured or killed.

- Before starting up the machine, ensure that the following prerequisites are met:

- The hydraulic lines are connected.
- The compressed air brake is coupled (depending on equipment).
- The hydraulic brake is connected (depending on equipment).
- The universal shaft is coupled and secured.
- The lighting system is connected.
- The terminal is connected.
- The safety chain is attached (not stipulated in all countries).
- All safety equipment is in place, is proper condition, and in the protective position.
- The PTO speed of 540 rpm is not exceeded.
- The universal shaft prescribed by the manufacturer is used.
- The hoses, cables and ropes are laid so that they do not scrape, come under tension or become jammed or come in contact with other parts (such as the tractor tyres).
- The parking brake is released.
- Machine parts of the tractor do not come into contact with parts of the machine (especially when turning).
- There are no persons in the machine danger zone.



Safety

This page has been left blank deliberately!!



4.6 Safety stickers on the machine

4.6.1 Position and meaning of the safety stickers on the machine

The KRONE round baler is equipped with all safety devices (protective equipment). 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 safety labels. Important information on the position of these safety signs and what they mean is given below!

Safety

Fortima F 1250 (MC) / F 1600 (MC)

FOR00046_2

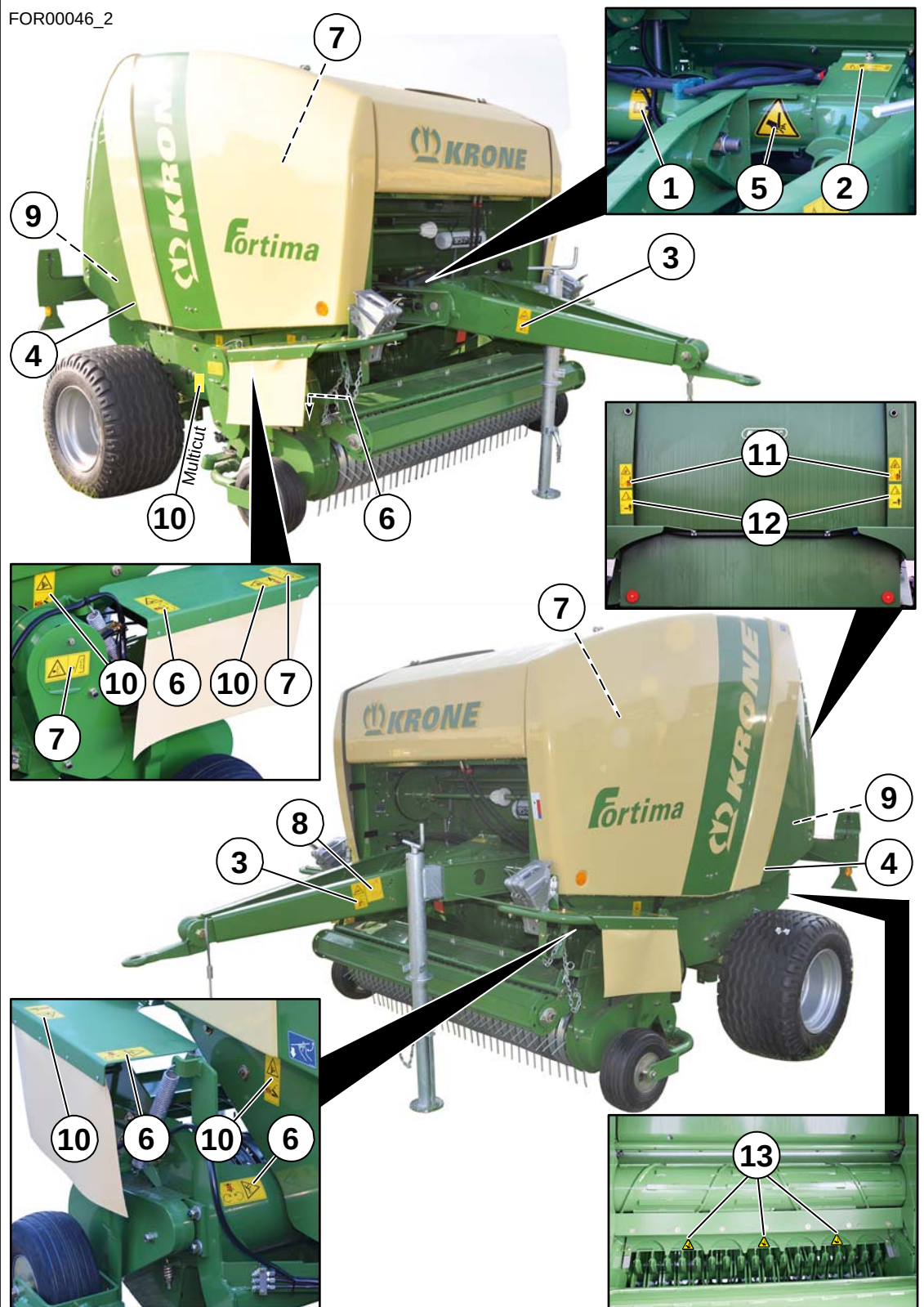
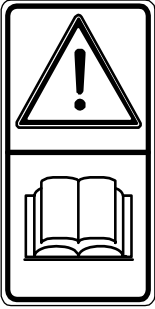
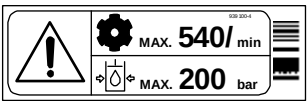


Fig. 1

1) Order no. 939 471 1 (1x)

	Danger due to incorrect operation and lack of knowledge Incorrect operation and lack of knowledge of the machine as well as incorrect behaviour in hazardous situations is risking the life of the operator and third parties. Before starting up the machine, read and follow the operating instructions and safety instructions.
---	---

2) Order no. 939 100 4 (1x)

	Danger if the maximum permitted PTO speed or the maximum permitted operating pressure is exceeded. If the maximum permitted PTO speed is exceeded, parts of the machine may be destroyed or forcibly ejected. If the maximum permitted operating pressure is exceeded, hydraulic parts may be damaged. As a result, people may receive serious or life threatening injuries. - Observe the permitted PTO speed. - Observe the permitted operating pressure.
---	---

3) Order no. 939 407 1 (2x)

	Danger due to rotating pick-up. There is a danger of being drawn in if you approach the danger zone and if you use your hands or feet to clear clogging. Before working on the pick-up, switch off the PTO shaft and the engine.
---	---

4) Order No. 27 014 371 0 (2x)

	Danger from shock and crush Danger to life due to sagging tailgate. - When doing maintenance work in the area of the tailgate, close the stop cock on the left lifting cylinder. - Make sure that there are no persons under the raised tailgate.
---	---

Safety

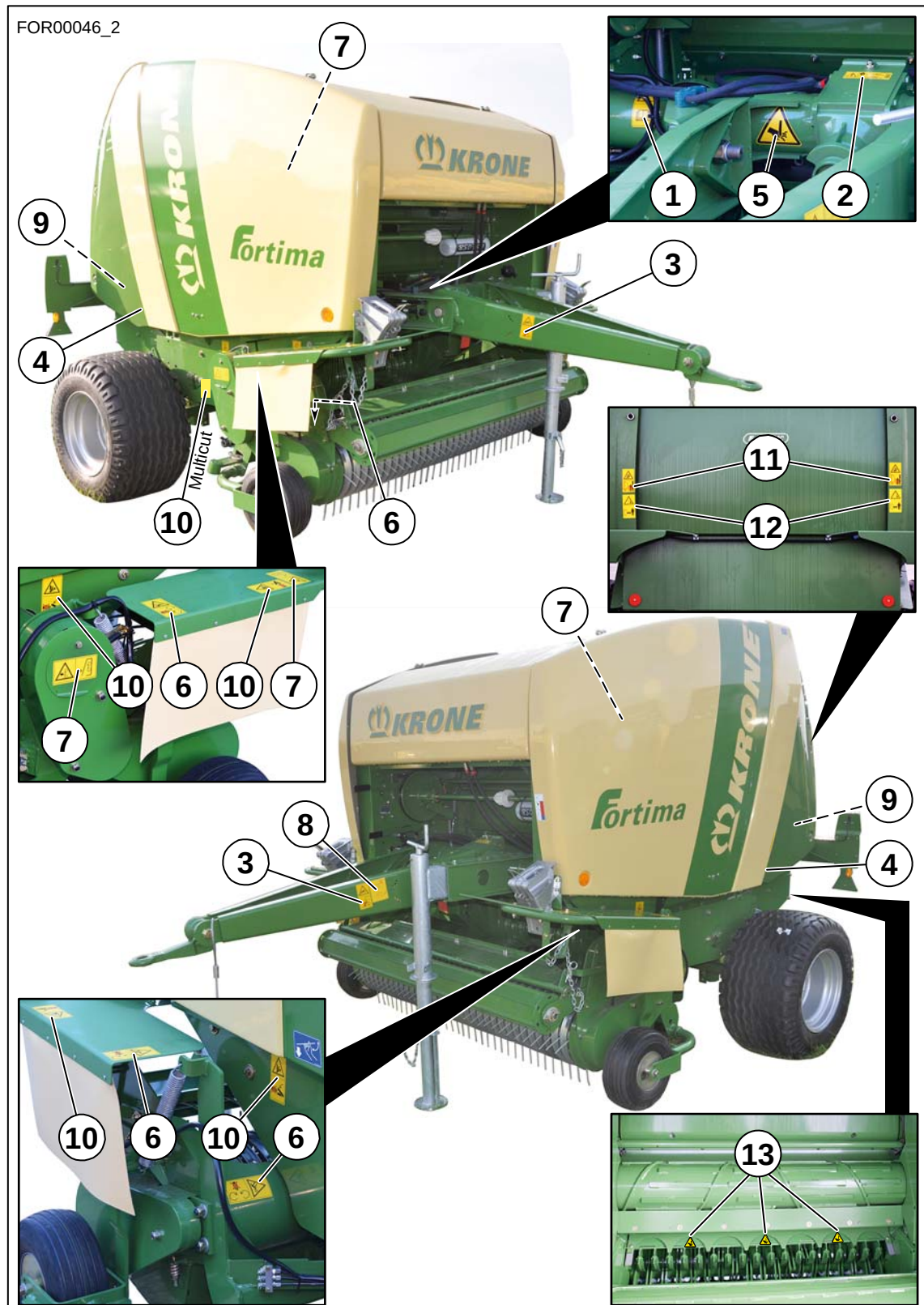


Fig. 2

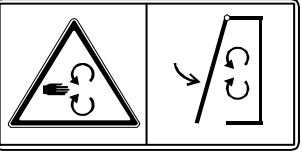
5) Order no. 939 125 1 (1x) H = 100mm

	Danger from sharp blades. There is a risk of cuts when reaching into the danger zone of the blades. • Wear cut-resistant gloves.
---	--

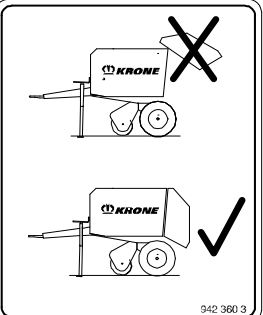
6) Order no. 939 520 1 (2x)

	Danger due to rotating auger. There is a danger of becoming caught or wrapped around the rotating auger. • Never reach into the rotating auger. • Keep a sufficient distance from moving machine parts.
---	--

7) Order no. 942 002 4 (4x)

	Danger due to rotating machine parts. When the machine is running, there is a risk of injury due to rotating machine parts. • Before starting up, move the guards into their protective position.
--	---

8) Order No. 942 360 3 (1x)

	Danger due to accidental movement of the machine when opening the tailgate. Risk of injury as the machine may roll away or tilt. • Before opening the tailgate, make sure that the machine is connected correctly to the tractor.
---	---

Safety

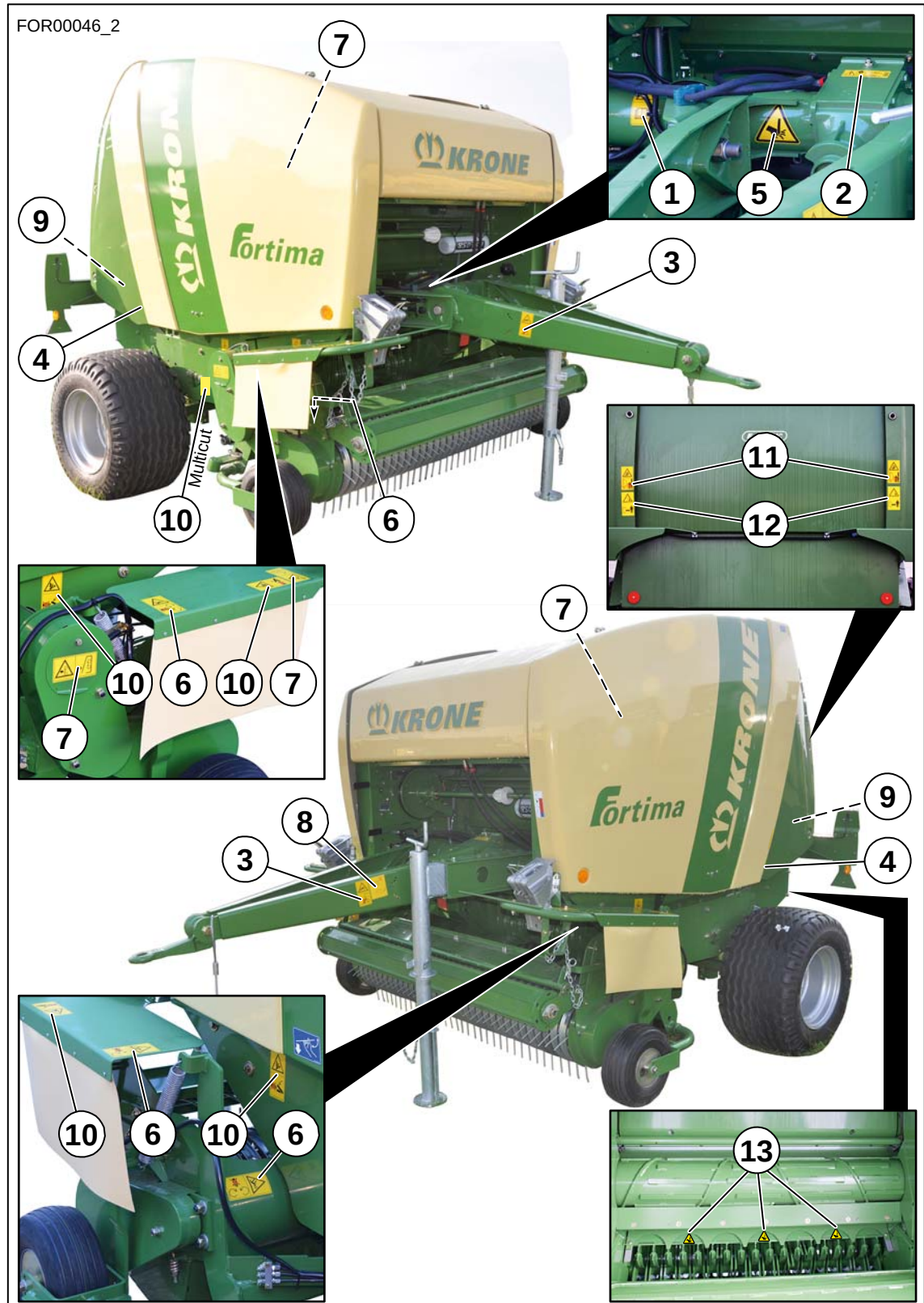
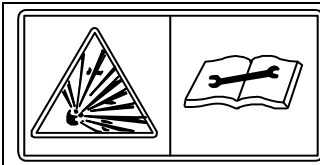


Fig. 3

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

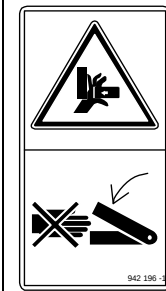


Danger due to high-pressure liquid.

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.

10) Order No. 942 196 1 (5x)



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.

11) Order No. 939 412 2 (2x)



Danger from shock and crush

Crushing hazard for persons in the danger zone between tailgate and a fixed obstacle when opening the tailgate.

- Make sure that there is no one between the tailgate and a fixed obstacle.

12) Order no. 27 013 422 0 (2x)



Danger due to crushing

Risk of injury from the rolling bale.

- Ensure that there is nobody inside the danger zone.

Safety

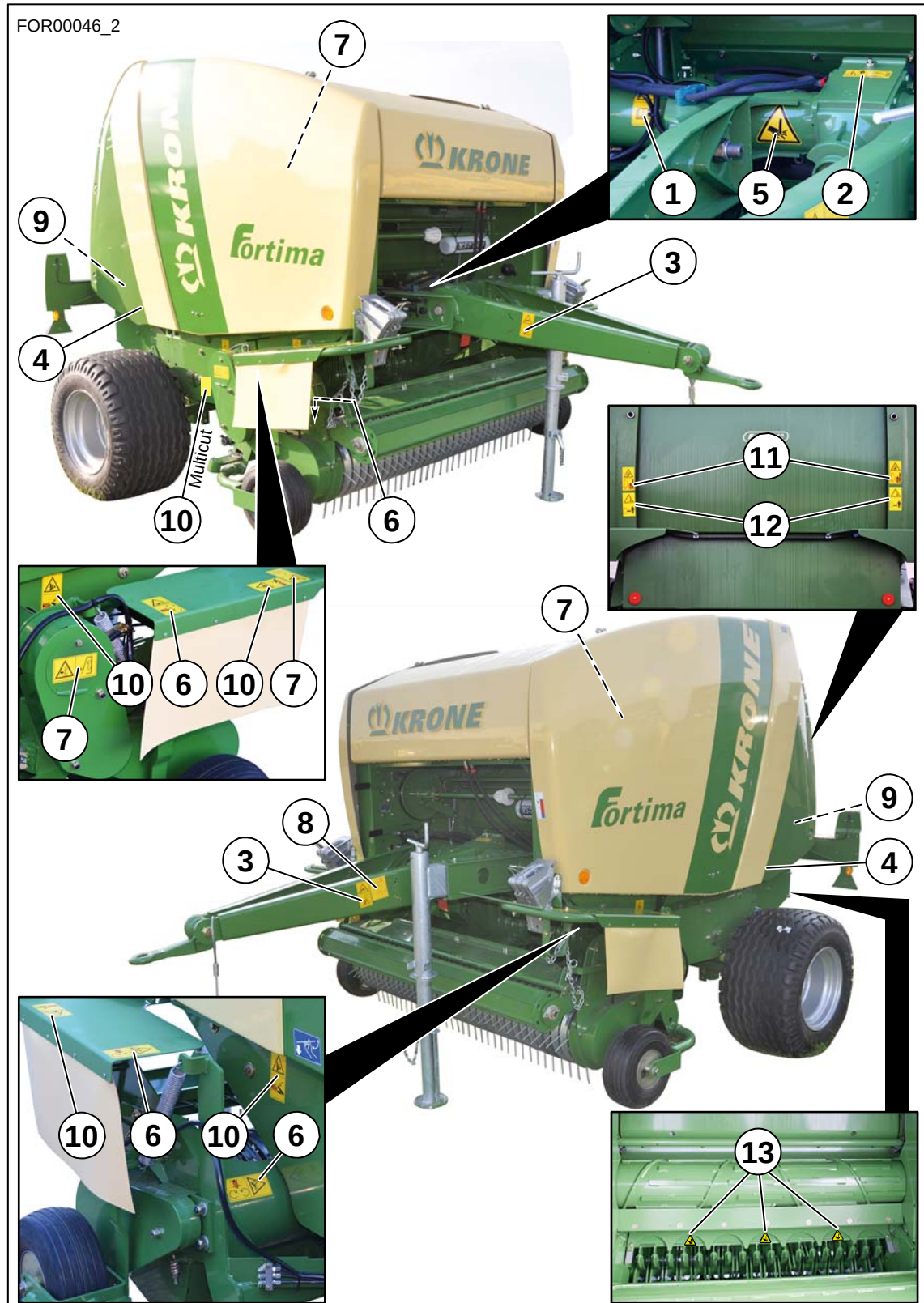


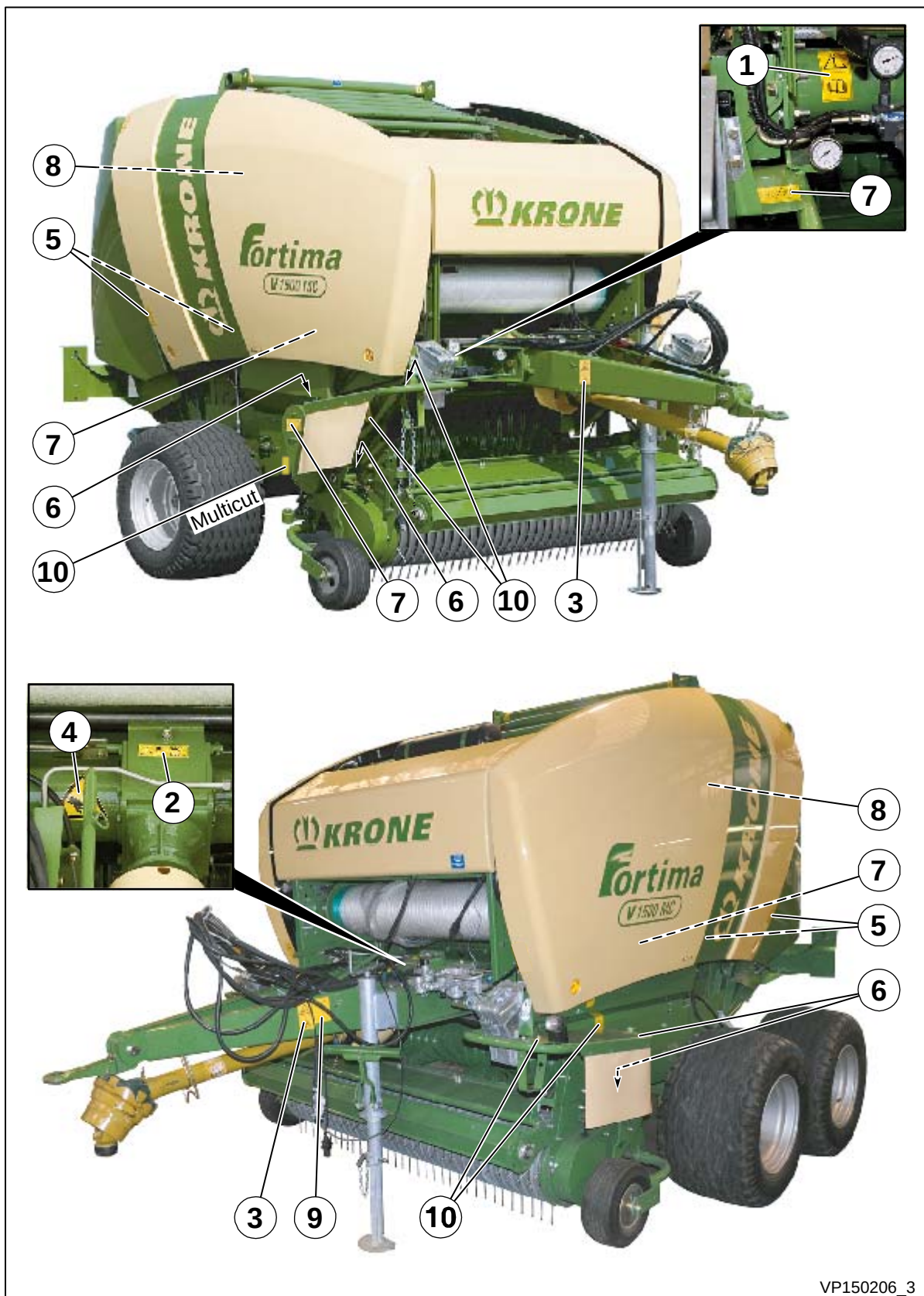
Fig. 4

13) Order no. 27 007 502 0 (1x) H = 70mm

	Danger from sharp blades. There is a risk of cuts when reaching into the danger zone of the blades. • Wear cut-resistant gloves.
---	--

Safety

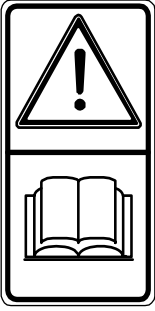
Fortima V 1500 (MC) / V 1800 (MC)



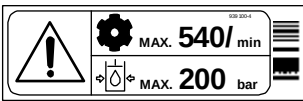
VP150206_3

Fig. 5

1) Order no. 939 471 1 (1x)

	Danger due to incorrect operation and lack of knowledge Incorrect operation and lack of knowledge of the machine as well as incorrect behaviour in hazardous situations is risking the life of the operator and third parties. Before starting up the machine, read and follow the operating instructions and safety instructions.
---	---

2) Order no. 939 100 4 (1x)

	Danger if the maximum permitted PTO speed or the maximum permitted operating pressure is exceeded. If the maximum permitted PTO speed is exceeded, parts of the machine may be destroyed or forcibly ejected. If the maximum permitted operating pressure is exceeded, hydraulic parts may be damaged. As a result, people may be receive serious or life threatening injuries. - Observe the permitted PTO speed. - Observe the permitted operating pressure.
---	--

3) Order no. 939 407 1 (2x)

	Danger due to rotating pick-up. There is a danger of being drawn in if you approach the danger zone and if you use your hands or feet to clear clogging. Before working on the pick-up, switch off the PTO shaft and the engine.
---	---

4) Order no. 939 125 1 (1x) H = 100mm

	Danger from sharp blades. There is a risk of cuts when reaching into the danger zone of the blades. Wear cut-resistant gloves.
---	---

Safety

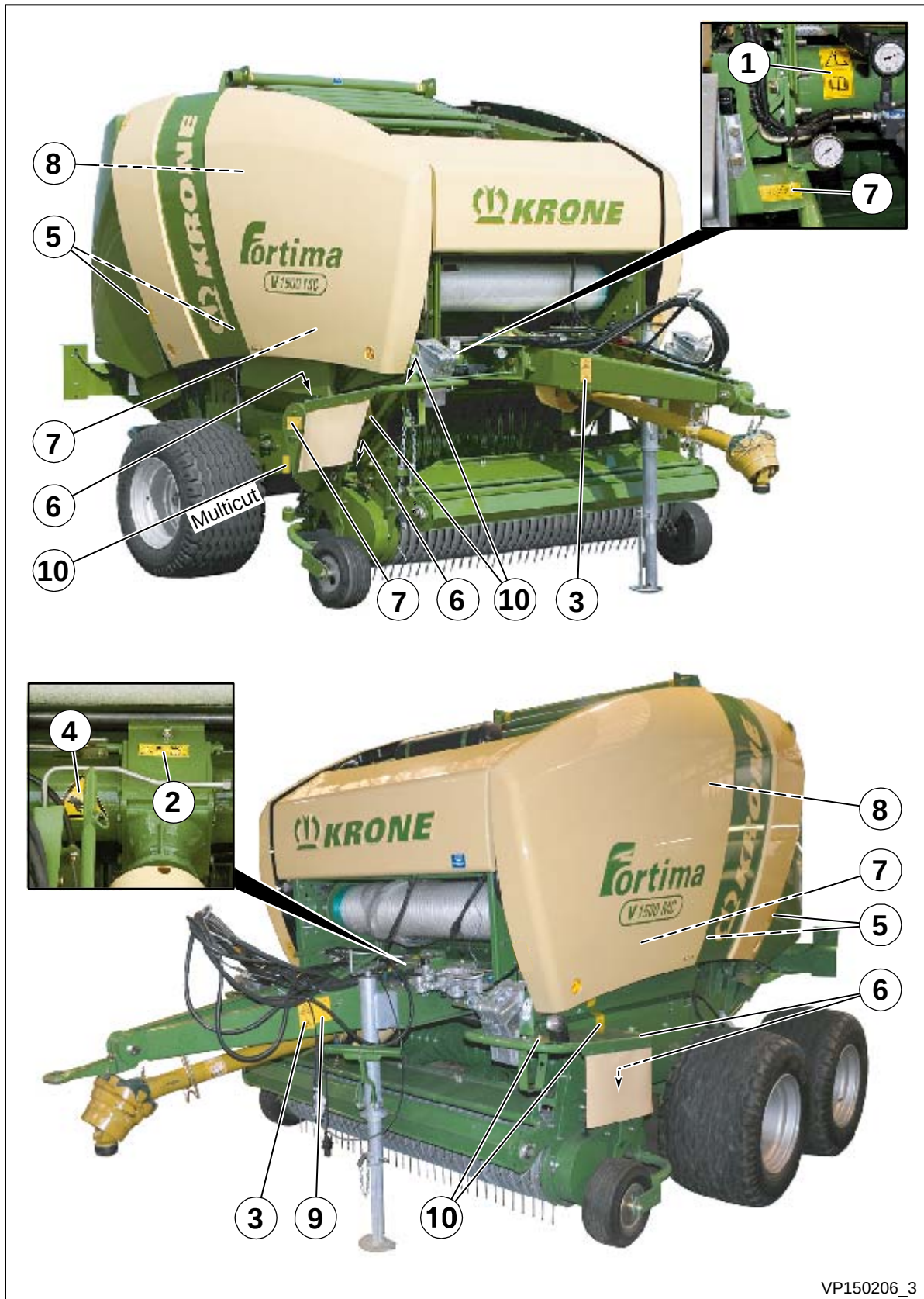
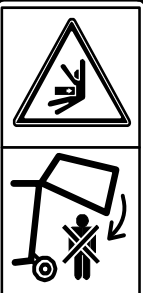
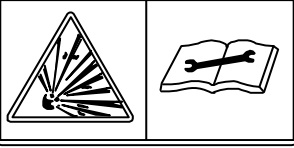


Fig. 6

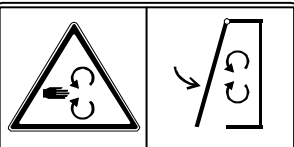
5) Order no. 939 521 1 (1x)

	Danger from shock and crush Danger to life due to sagging tailgate. • Make sure that there is no one under the raised tailgate. • Do not stay under the raised tailgate until the tailgate is secured against accidental lowering.
---	--

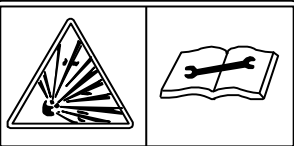
6) Order no. 939 529 0 (2x)

	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.
---	--

7) Order no. 942 002 4 (4x)

	Danger due to rotating machine parts. When the machine is running, there is a risk of injury due to rotating machine parts. • Before starting up, move the guards into their protective position.
--	--

8) 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.
---	--

Safety

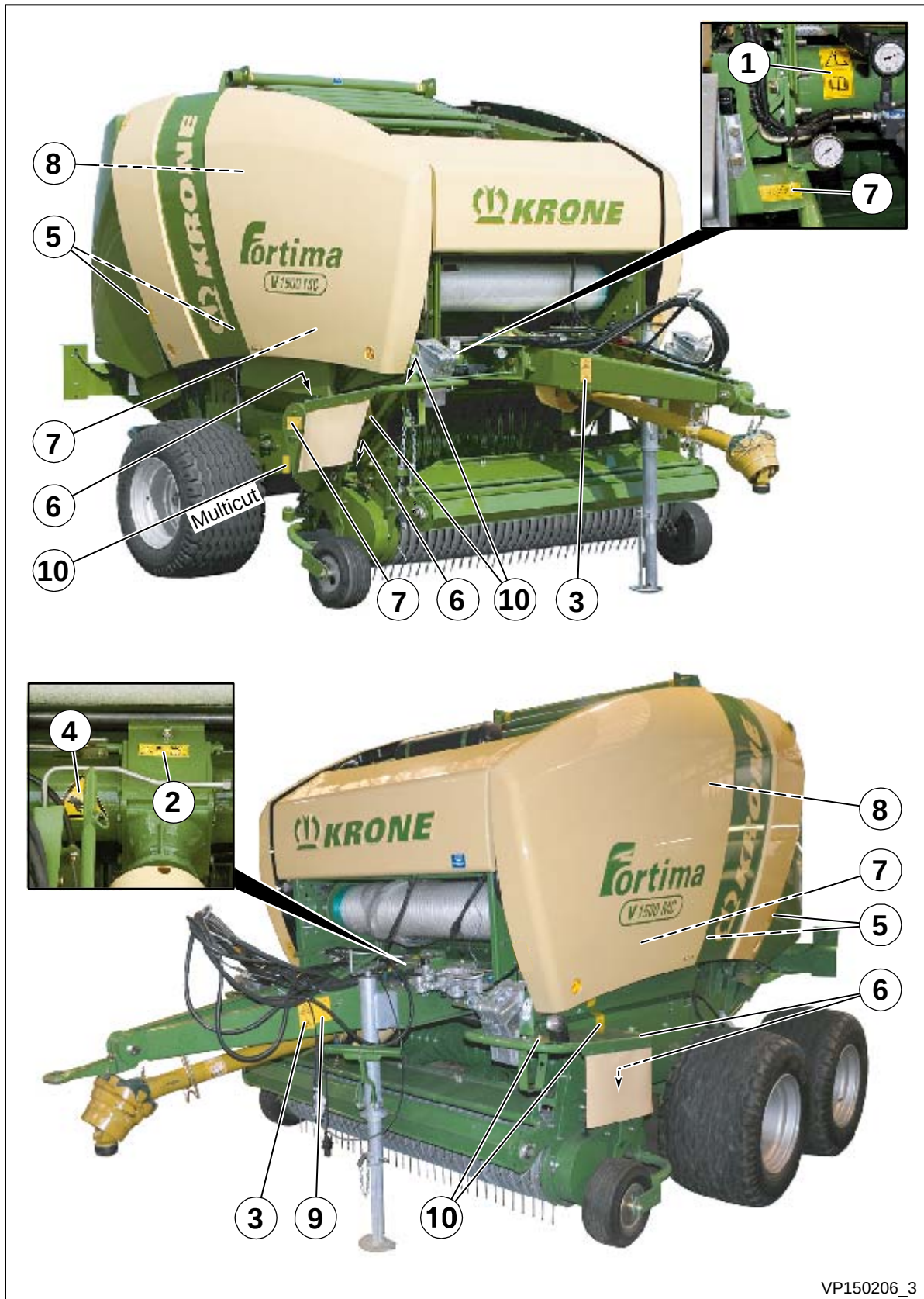
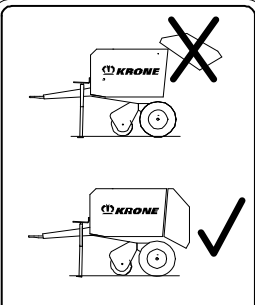


Fig. 7

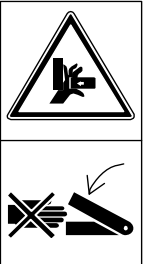


Fig. 8

9) Order No. 942 360 3 (1x)

	Danger due to accidental movement of the machine when opening the tailgate. Risk of injury as the machine may roll away or tilt. Before opening the tailgate, make sure that the machine is connected correctly to the tractor.
--	---

10) Order No. 942 196 1 (5x)

	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.
---	--

11) Order No. 939 412 2 (2x)

	Danger from shock and crush Crushing hazard for persons in the danger zone between tailgate and a fixed obstacle when opening the tailgate. Make sure that there is no one between the tailgate and a fixed obstacle.
---	---

Safety

4.6.2 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").

4.6.3 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.
-

4.6.4 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

4.7 Safety Equipment



WARNING! - Unexpected movement of components due to defective safety equipment!

Effect: Danger to life, risk of a serious accident or damage to the machine

- Machine must not be started without functioning safety equipment.

4.7.1 Parking Brake

(Optional)



WARNING!

Unexpected movement of the machine!

The machine may move unintentionally if the parking brake is not activated when parking the machine. Thus there is a risk of serious injuries or death.

- Always apply the parking brake when the tractor is left or the machine is switched off.

The parking brake (1) is located on the front side of the machine on the drawbar.

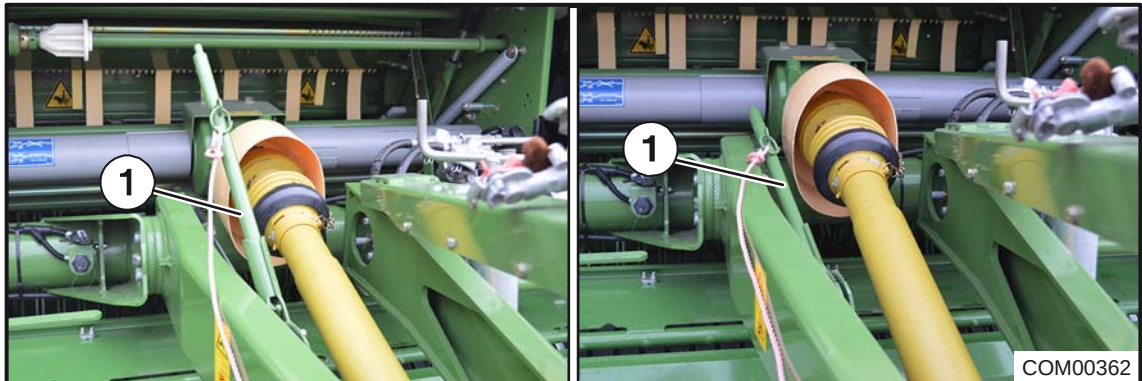


Fig. 9

a) Parking brake applied

b) Parking brake released

The parking brake is used to secure the machine from rolling away accidentally, especially when the machine is disconnected from the tractor.

To apply the parking brake:

- Press button on the end of the lever and pull lever (1) up as far as it will go.

To release the parking brake:

- Press the button on the end of the lever and push down lever (1) as far as it will go.



Note

To prevent the machine from rolling away, use the wheel chocks in addition to the parking brake.

Safety

4.7.2 Attaching the safety cable

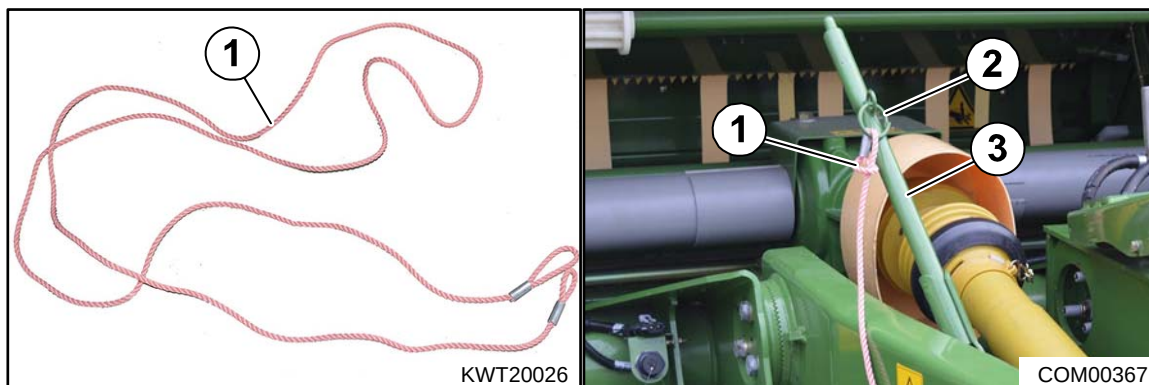


Fig. 10

The safety cable (1) applies the parking brake (3) if the machine breaks away from the tractor while it is driving.

Attaching the safety cable to the machine:

- Attach the safety cable to the parking brake. To do this, pull the safety cable through the small loop on the cable and through the ring (2).

Attaching the safety cable to the tractor:

- Attach the other end of the safety cable to a suitable point at the rear of the tractor. Make sure that the cable cannot slip or become detached.

4.7.3 Parking Support

The parking support ensures that the machine is stable when it is not hitched to the tractor.

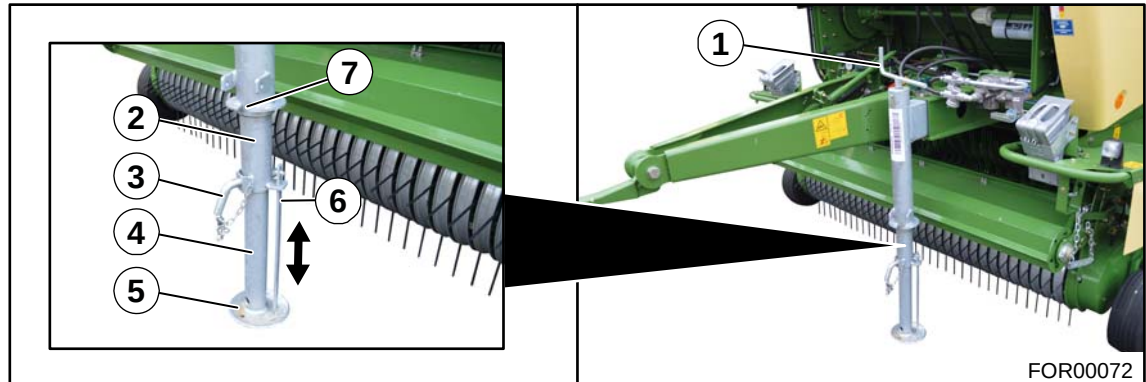


Fig. 11



Note

Risk of hands and feet when the parking support is actuated!

Raising the parking support

- As soon as the machine is connected to the tractor, turn the crank (1) several revolutions clockwise until the support jack (5) has been relieved.
- Pull out locking bolt (3) on the lower part of the parking support (2).
- Push in support tube (4) until the strut (6) is in the notch (7).
- Secure in position with the locking bolt (3).
- Then raise the parking support (2) all the way.

Lowering the parking support

- Turn the crank (1) on the parking support several revolutions anticlockwise.
- Remove locking bolt (3) and pull support tube (4) out of the parking support (2).
- Secure with locking bolt (3) again.
- Crank the support jack (5) firmly onto the ground until the drawbar has been relieved.



Note

In order to increase the base of the support jack when the ground is soft, use a suitable support.

Safety

4.7.4 Wheel chocks

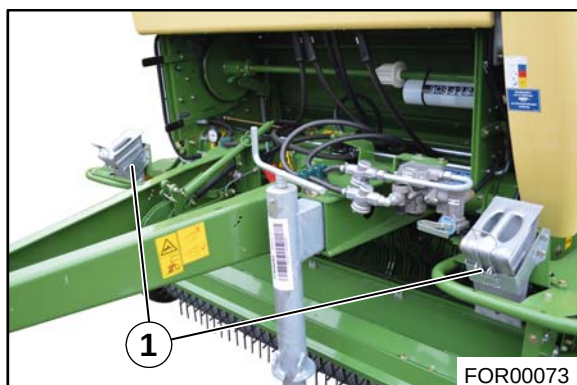


Fig. 12

The wheel chocks (1) are kept in two holders on the left and right next to the drawbar. Each one is locked in position in the holder by a spring clip.

4.7.5 Secure the machine against the possibility of rolling back.

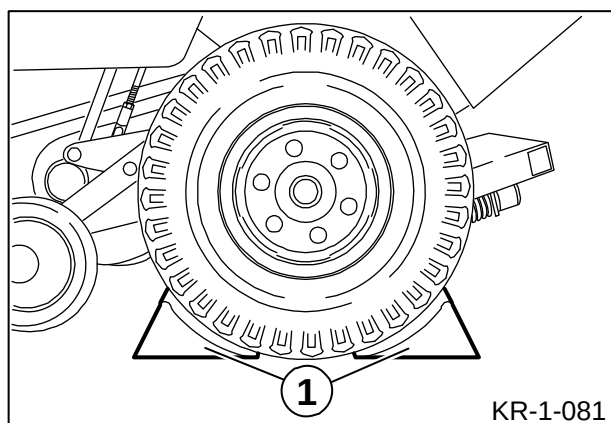


Fig. 13

- To prevent the disconnected machine from rolling back, lay wheel chocks (1) in front of and behind the same wheel.



Note

On machines with coaster/steering axle, make sure that a wheel on the front axle is secured.

4.7.6 Stop Points



WARNING!

Danger from falling loads!

- Never step or stay under suspended loads!
- Maintain an adequate safety distance from suspended loads.
- Before transportation, compare load capacity of slings and cranes and choose transportation equipment with a sufficient degree of safety and lifting capacity.
- Prevent strong impacts and make sure that the machine does not become wedged!

4.7.7 Lifting Eyes

The baler is equipped with three suspension points:

- A suspension point is located in the front area of the drawbar.
- Two suspension points can be found rear on the yoke (right and left upper machine side).

4.7.8 Lifting

- Use a lifting traverse with a minimum load-bearing capacity (depending on the permitted gross weight of the machine) (refer to Chapter entitled Introduction "Identification")
- Close the tailgate
- Swivel the parking support (parking jack) into transport position
- Lift the pick-up
- Make certain all safety devices are locked
- Attach the chains of the lifting traverse to the four suspension points of the machine
- Make sure that the hooks of the chains are attached correctly on the suspension points

Safety

4.7.9 Shut-off valve for tailgate

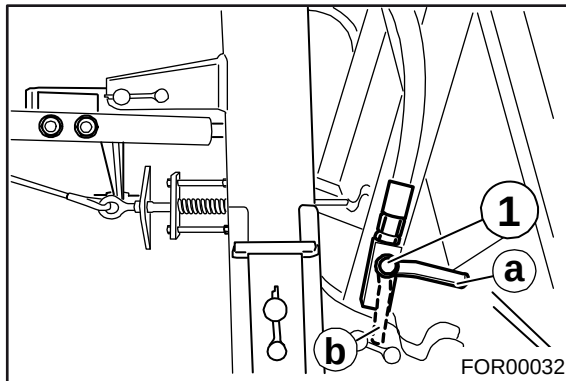


WARNING! – Settings on the machine!

Danger to life or serious injuries.

- The shut-off valve on the left hydraulic cylinder must be closed.

Fortima V1500 (MC)/V1800 (MC)



Fortima F1250 (MC)/F1600 (MC)

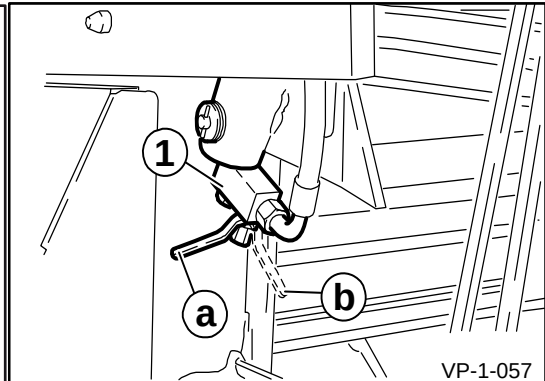


Fig. 14

Pressure is supplied to the machine hydraulics through hoses from the tractor. Along with various parts, the shut-off valve (1) on the left hydraulic cylinder should be mentioned. It is designed as a safety component to prevent the tailgate from closing unintentionally.

Position "a"

Hydraulic cylinder return locked. The tailgate cannot be closed.

Always move the shut-off valve to position "a" for work inside the bale chamber and on the open tailgate.

Position "b"

Hydraulic cylinder return opened. The tailgate can be closed.

To close the tailgate always return the shut-off valve to position "b" after working inside the bale chamber or on the tailgate.

4.7.10 Step for working on the linkage**WARNING!****Danger of injury when climbing or descending.**

Persons who behave carelessly when getting on and off the machine may fall down from the ladder. Persons getting on the machine without using the ladders intended for that purpose may slip or fall or they may get hurt seriously. Dirt as well as operating fluids and lubricants may impair surefootedness and stability.

- Just use ladders intended for this purpose.
- Always keep ladder steps and platforms clean and in proper condition so that you can step and stay safely.
- Do not get on and off when the machine is moving.
- Always get on and off with the face towards the machine.
- When getting on and off, ensure three-point contact with steps and handrails (both hands and one foot are in contact with the machine or both feet and one hand).
- When getting on and off the machine, never use control elements as a handle. An accidental activation of control elements may cause functions to be activated unintentionally. This holds a danger.
- When getting off the machine, never jump.

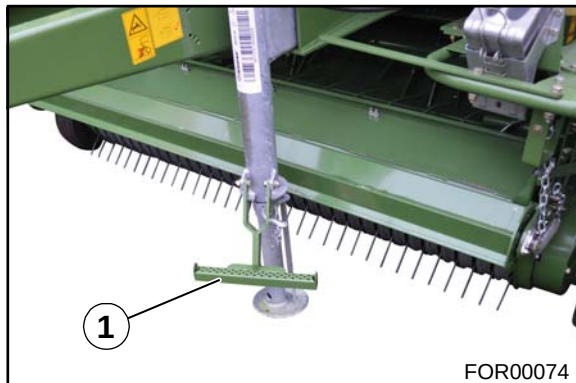


Fig. 15

Attached to the parking support is a step (1) which facilitates access to the binding mechanism and the supply of binding material.

While driving, the step must be folded up:

- Fold the step up.

Safety

4.8 Identification Plate

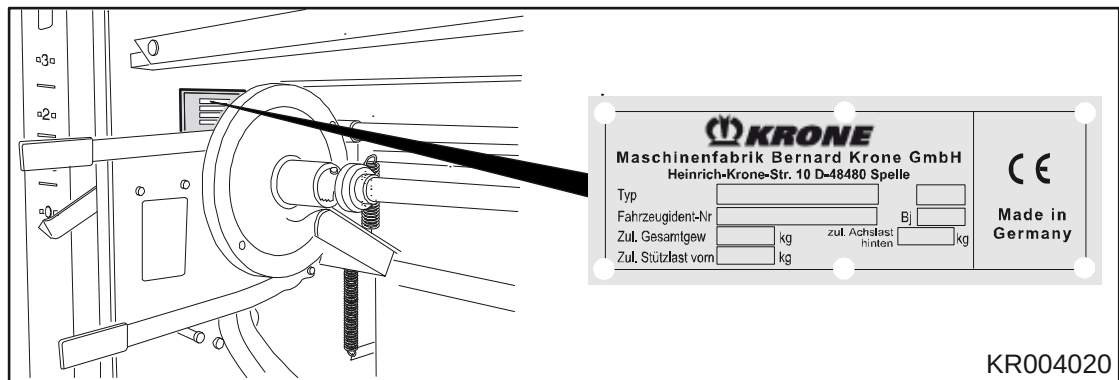


Fig. 16

The machine data are located on the type plate (1), which is located on the right-hand side of the machine below the twine box.

4.9 Information Required for Questions and Orders

Type	
Year of manufacture	
Vehicle ID number	



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, vehicle ID number and the year of manufacture : 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 and other devices which are not manufactured, tested or approved by KRONE will result in the revoking of the liability for damages resulting thereof.



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.



Technical data

		Fortima F 1250 / Fortima F 1250 MC	
Axle		Single axle	Tandem axle
Pick-up (width)		2050 mm	2050 mm
Width approx.	11.5/80-15*	2460 mm	2740 mm
	15.0/55-17*	2535 mm	2815 mm
	19.0/45-17**	2655 mm	2885 mm
	500/50-17**	2700 mm	--
Permissible weights		see information listed on identification plate	
Track width		2150 mm*/2200 mm**	2430 mm
Tyres		11.5/80-15.3/10 PR 15.0/55-17/10 PR 19.0/45-17/10 PR	
		500/50-17/10 PR	--
Length approx.		4100 mm	
Height at 500/50-17 approx.		2465 mm	
Bale dimensions	Diameter approx.	1250 mm	
	Width approx.	1200 mm	
Power requirement approx.		36 kW (50 HP)	
Drive speed (PTO shaft)		540 rpm	
Max. permissible operating pressure of hydraulic system		200 bar	
Minimum oil quality		Oil ISO VG 46	
Max. oil temperature		80°C	
Delivery capacity hydraulics		min. 30 l/min max. 60 l/min	
Electrical connections	Lighting	12 volts – 7-pin plug	
	Operation	12 volts – 3-pin plug	
Twine	Open air storage	Synthetic twine 400 - 1000 m/kg	
	Indoor storage	Sisal twine 150 - 300 m/kg	
Net	Width	1250 ± 5 mm	
	Sleeve length	1250 - 1270 mm	
	Sleeve diameter	75 - 80 mm	
	Roll diameter	max. 310 mm (3000 m roll)	
Overload protection (universal shaft) Cam-type clutch 540 rpm		1300 Nm (Fortima F 1250) 1500 Nm (Fortima F 1250 MC)	
Overload protection (universal shaft) Friction clutch 540 rpm		1300 Nm (Fortima F 1250)	
Hydraulic connections	Open the tailgate	1 x single-action control unit	
	Raise pick-up or blade base (MC)	1 x single-action control unit	



Technical data

		Fortima F 1600 / Fortima F 1600 MC	
Axle		Single axle	Tandem axle
Pick-up (width)		2050 mm	2050 mm
Width approx.	11.5/80-15*	2460 mm	2740 mm
	15.0/55-17*	2535 mm	2815 mm
	19.0/45-17**	2655 mm	2885 mm
	500/50-17**	2700 mm	--
Permissible weights		see information listed on identification plate	
Track width		2150 mm*/2200 mm**	2430 mm
Tyres		11.5/80-15.3/10 PR 15.0/55-17/10 PR 19.0/45-17/10 PR	
		500/50-17/10 PR	--
Length approx.		4300 mm	
Height (500/50-17) approx.		2600 mm	
Bale dimensions	Diameter approx.	1550 mm	
	Width approx.	1200 mm	
Power requirement approx.		40 kW (55 HP)	
Drive speed (PTO shaft)		540 rpm	
Max. permissible operating pressure of hydraulic system		200 bar	
Minimum oil quality		Oil ISO VG 46	
Max. oil temperature		80 °C	
Delivery capacity hydraulics		min. 30 l/min max. 60 l/min	
Electrical connections	Lighting	12 V – 7-pin plug	
	Operation	12 V – 3-pin plug	
Twine	Open air storage	Synthetic twine 400 - 1000 m/kg	
	Indoor storage	Sisal twine 150 - 300 m/kg	
Net	Width	1250 ± 5 mm	
	Sleeve length	1250 - 1270 mm	
	Sleeve diameter	75 - 80 mm	
	Roll diameter	max. 310 mm (3000 m roll)	
Overload protection (universal shaft) Cam-type clutch 540 rpm		1300 Nm (Fortima F 1600) 1500 Nm (Fortima F 1600 MC)	
Overload protection (universal shaft) Friction clutch 540 rpm		1300 Nm (Fortima F 1600)	
Hydraulic connections	Open tailgate	1 x single-action control unit	
	Raise pick-up or blade base (MC)	1 x single-action control unit	

Technical data

		Fortima V 1500 /Fortima V 1500 MC	
Axle		Single axle	Tandem axle
Pick-up (width)		2050 mm	2050 mm
Width approx.	11.5/80-15*	2460 mm	2740 mm
	15.0/55-17*	2535 mm	2815 mm
	19.0/45-17**	2655 mm	2885 mm
	500/50-17**	2700 mm	--
Permissible weights		see information listed on identification plate	
Track width		2150 mm*/2200 mm**	2430 mm
Tyres		11.5/80-15.3/10 PR 15.0/55-17/10 PR 19.0/45-17/14 PR	
		500/50-17/10 PR	--
Length without bale ejector approx.		3810 mm	
Length with bale ejector approx.		4400 mm	
Height at 500/50-17 approx.		2620 mm	
Bale dimensions	Diameter approx.	1000 - 1500 mm	
	Width approx.	1200 mm	
Power requirement approx.		36 kW (50 HP)	
Drive speed (PTO shaft)		540 rpm	
Max. permissible operating pressure of hydraulic system		200 bar	
Minimum oil quality		Oil ISO VG 46	
Max. oil temperature		80°C	
Delivery capacity hydraulics		min. 30 l/min max. 60 l/min	
Electrical connections	Lighting	12 volts – 7-pin plug	
	Operation	12 volts – 3-pin plug	
Twine	Open air storage	Synthetic twine 400 - 600 m/kg	
	Indoor storage	Sisal twine 150 - 300 m/kg	
Net	Width	1250 ± 5 mm	
	Sleeve length	1250 - 1270 mm	
	Sleeve diameter	75 - 80 mm	
	Roll diameter	max. 310 mm (3000 m roll)	
Overload protection (universal shaft) Cam-type clutch 540 rpm		1300 Nm (Fortima V 1500) 1500 Nm (Fortima V 1500 (MC))	
Hydraulic connections	Open the tailgate	1 x single-action control unit 1 x depressurised return	
	Raise pick-up or blade base (MC)	1 x single-action control unit	



Technical data

		Fortima V 1800 / Fortima V 1800 MC	
Axle		Single axle	Tandem axle
Pick-up (width)		2050 mm	2050 mm
Width approx.	11.5/80-15*	2460 mm	2740 mm
	15.0/55-17*	2535 mm	2815 mm
	19.0/45-17**	2655 mm	2885 mm
	500/50-17**	2700 mm	--
Permissible weights		see information listed on identification plate	
Track width		2150 mm*/2200 mm**	2430 mm
Tyres		11.5/80-15.3/10 PR 15.0/55-17/10 PR 19.0/45-17/14 PR	
		500/50-17/10 PR	--
Length without bale ejector approx.		4480 mm	
Length with bale ejector approx.		5000 mm	
Height at 500/50-17 approx.		2620 mm	
Bale dimensions	Diameter approx.	1000 - 1800 mm	
	Width approx.	1200 mm	
Power requirement approx.		40 kW (55 HP)	
Drive speed (PTO shaft)		540 rpm	
Max. permissible operating pressure of hydraulic system		200 bar	
Minimum oil quality		Oil ISO VG 46	
Max. oil temperature		80°C	
Delivery capacity hydraulics		min. 30 l/min max. 60 l/min	
Electrical connections	Lighting	12 volts – 7-pin plug	
	Operation	12 volts – 3-pin plug	
Twine	Open air storage	Synthetic twine 400 - 1000 m/kg	
	Indoor storage	Sisal twine 150 - 300 m/kg	
Net	Width	1250 ± 5 mm	
	Sleeve length	1250 - 1270 mm	
	Sleeve diameter	75 - 80 mm	
	Roll diameter	max. 310 mm (3000 m roll)	
Overload protection (universal shaft) Cam-type clutch 540 rpm		1300 Nm (Fortima V 1800) 1500 Nm (Fortima V 1800 MC)	
Hydraulic connections	Open the tailgate	1 x single-action control unit 1 x depressurised return	
	Raise pick-up or blade base (MC)	1 x single-action control unit	

Technical data

5.1 Consumables



Environment! - Disposing of consumables and storage

Effect: Environmental damage

- Keep consumables in suitable containers according to statutory provisions.
- Dispose of used consumables according to statutory provisions.

Machine component	Filling quantity	Specification	Initial filling ex works
Main gearbox Fortima F	1.70 l	SAE 90	API-GL-4
Main gearbox Fortima V	1.60 l	SAE 90	API-GL-4
Oil lubrication	3.00 l	SAE 10W-40	SAE 10W-40

Biodegradable consumables on request.

6

Commissioning



WARNING!

Risk of accident or damage to the machine due to an incorrect initial operation!

Only an authorized service technician is permitted to carry out the initial operation.



WARNING!

If the basic safety instructions are not followed, people may be seriously injured or killed.

- To avoid accidents, the basic safety instructions in the chapter Safety must have been read and followed, see chapter Safety "Basic safety instructions".



WARNING!

If the safety routines are not adhered to, people may be seriously injured or killed.

- To avoid accidents, the safety routines in the chapter Safety must be read and followed, see chapter Safety "Safety routines".



WARNING!

Risk of injury due to the unsecured machine rolling away!

If the machine is not secured against rolling away when it has been switched off, there is a risk of people being injured by the machine rolling away in an uncontrolled manner.

- Secure the machine against rolling away with the parking brake and wheel chocks.

6.1

Before initial start-up

For reasons related to transport, the machine is delivered without the PTO shaft and bale ejector. Before initial start-up, the machine must be completely assembled and adjusted to the tractor type.

The following parts are included loose with delivery in some cases.

Commissioning

Fortima F 1250 (MC)/Fortima F 1600 (MC)

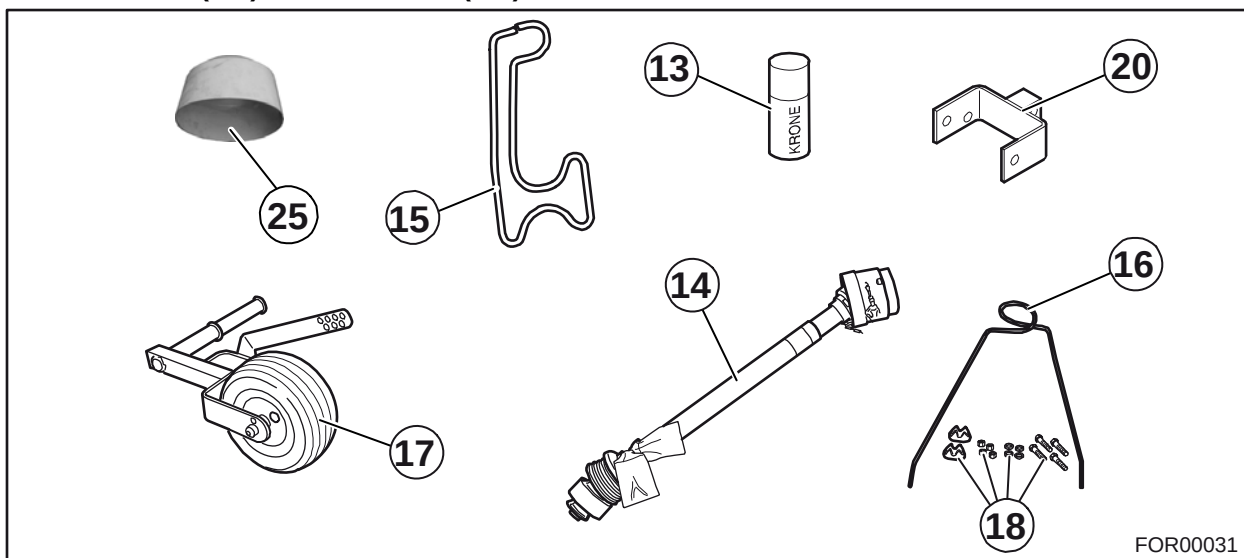


Fig. 17

Fortima V 1500 (MC)/Fortima V 1800 (MC)

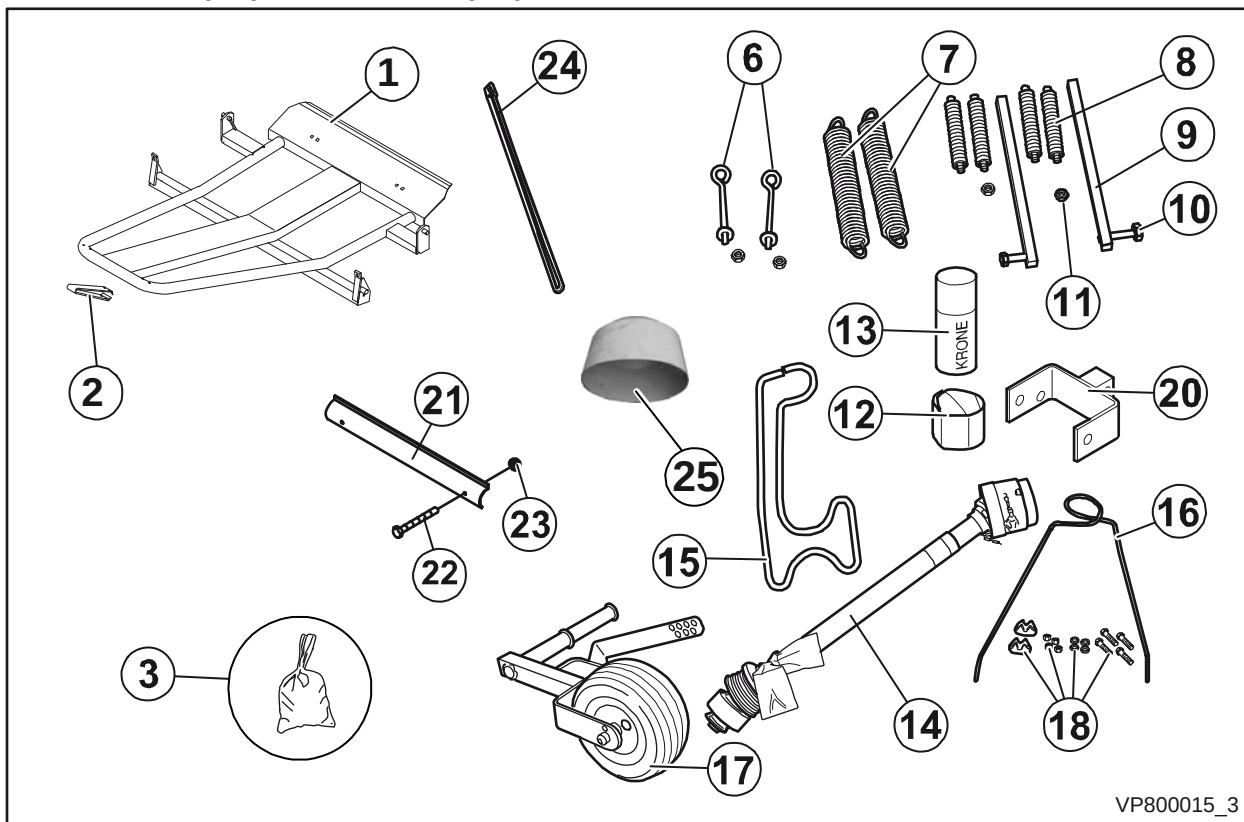


Fig. 18



Commissioning

- | | |
|--|--|
| 1 Bale ejector (pallet) | 12 Safety films (twine box) |
| 2 Spacer (twine box) | 13 Can of spray paint (twine box) |
| 3 Small parts (twine box) | 14 Universal shaft (bale chamber) |
| 4 Nuts (twine box) | 15 Universal shaft support (twine box) |
| 5 Linkage (twine box) | 16 Hose holder and cable holder (bale chamber) |
| 6 Eye bolts | 17 Guide wheels (bale chamber) |
| 7 Springs (twine box) | 18 Fastening material (twine box) |
| 8 Springs with clamping screws (twine box) | 19 Screw (twine box) |
| 9 Strip (twine box) | 20 Universal shaft bracket (twine box) |
| 10 Screws (twine box) | 21 Driver guide rail (twine box) |
| 11 Nuts (twine box) | 22/23 Fastening material (twine box) |
| | 24 Linkage (twine box) |
| | 25 Guard cup (twine box) |

Commissioning

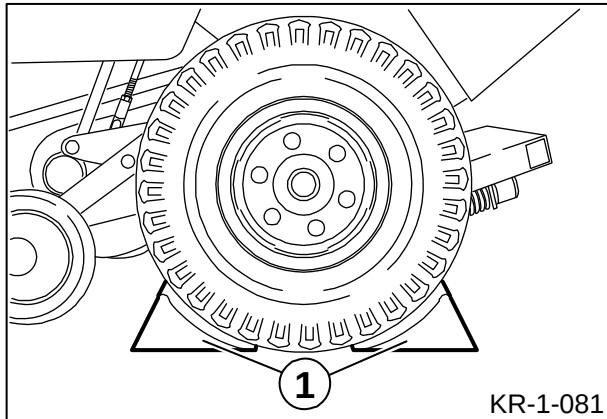


Fig. 19

- Park the machine on firm, level ground.
- Place two wheel chocks (1) under the wheels to prevent the machine from rolling away.

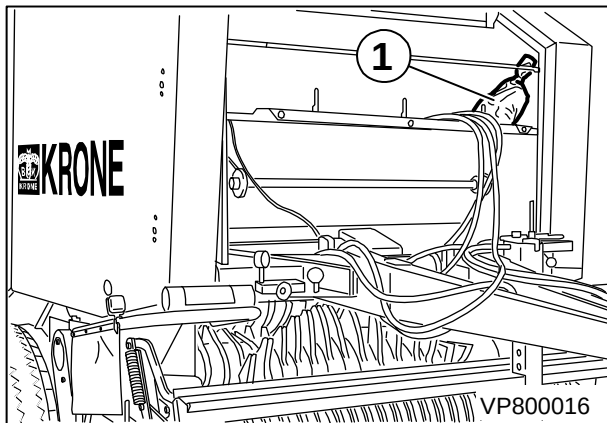


Fig. 20

- Take the bag with the small parts (1) out of the twine box.

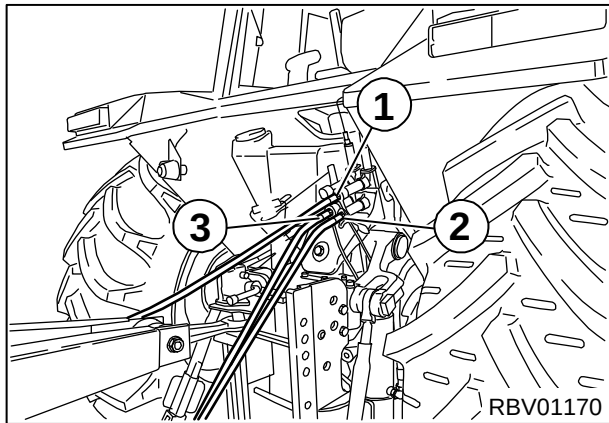


Fig. 21

- Relieve all pressure from the tractor hydraulics.
- Connect the hydraulic hoses (1), (2) and (3) to the tractor hydraulics according to colour coding.

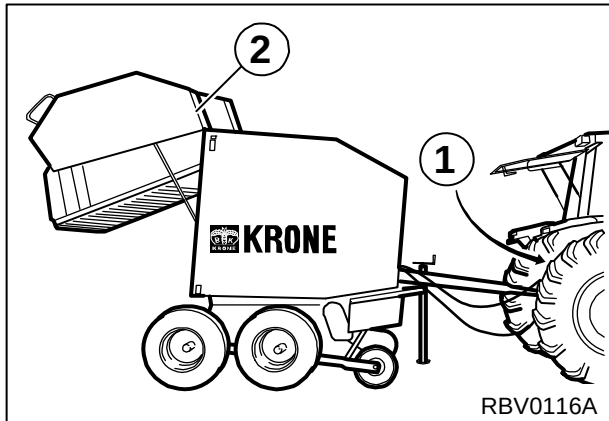


Fig. 22

- Set the control valve (1) for "Open tailgate (2)" to "Raise".



WARNING! – Unintentional closing of the tailgate!

Effect: severe injuries.

- Secure the open tailgate to prevent it from closing unintentionally.

Commissioning

Fortima V1500 (MC)/V1800 (MC)

Fortima F1250 (MC)/F1600 (MC)

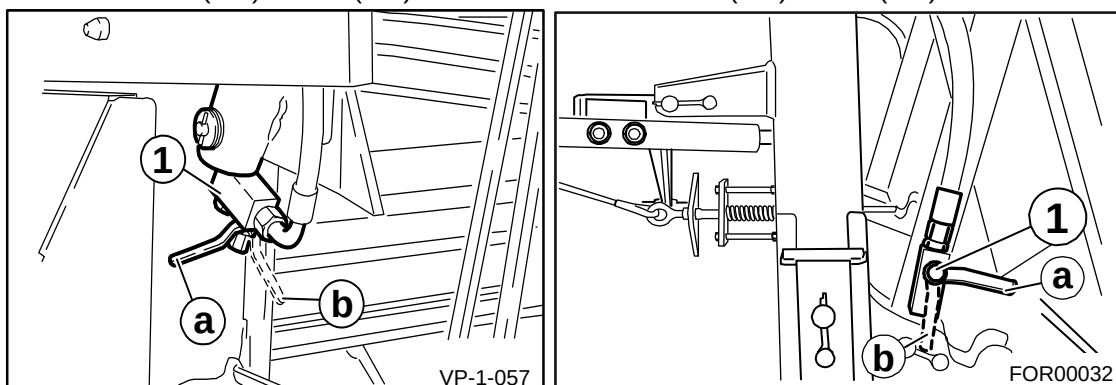


Fig. 23

- Swivel shut-off valve (1) in the return of the left lifting cylinder from position (b) to position (a), the tailgate is locked hydraulically.

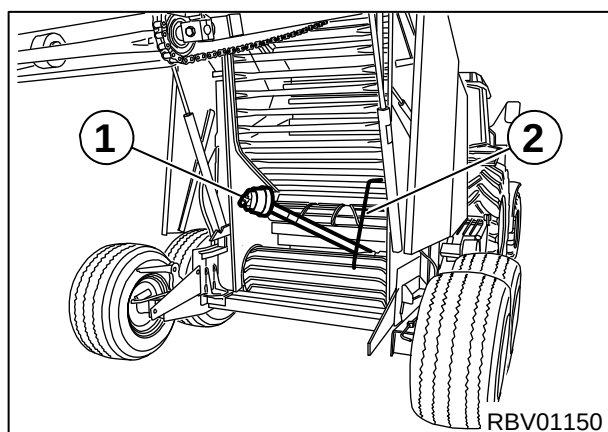


Fig. 24

- Take the additional components (1) and (2) out of the bale chamber.

Close the tailgate:

- Swing the shut-off valve (1) in the return of the left lifting cylinder from position (a) to position (b).
- Activate the tractor hydraulics.
- Set the control valve for „Closing the Tailgate“ on “Lowering”.

6.2 Assembling the bale ejector

Optional for Fortima V1500 (MC)/V1800 (MC)

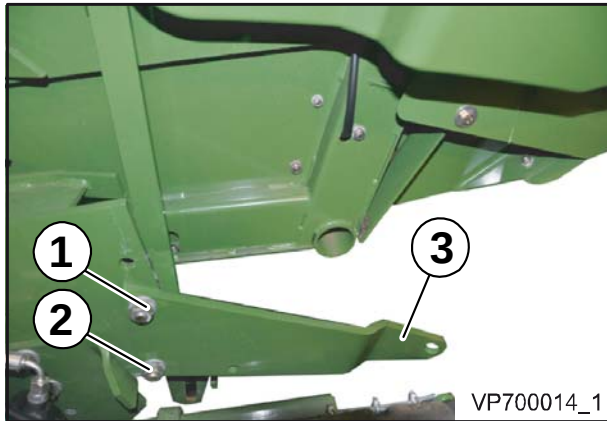


Fig. 25

- Loosen, but do not remove, the screw connections (1, 2) in the mounting plates (3) on the right and left of the bale chamber.
- Push both mounting plates (3) outwards.

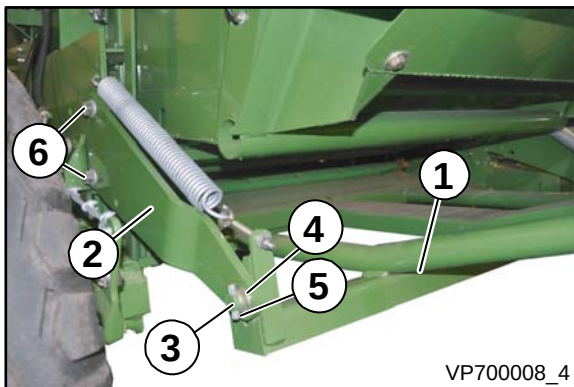


Fig. 26

- Slide the bale ejector (1) between the mounting plates (2), inserting the bolts (3) on the bale ejector into the lower bores in the right and left mounting plates.
- Secure the bolts on the bale ejector on the right and left using a washer (4) and clamping sleeve (5).
- Securely tighten the screw connections (6) in the mounting plates on the right and left.

Commissioning

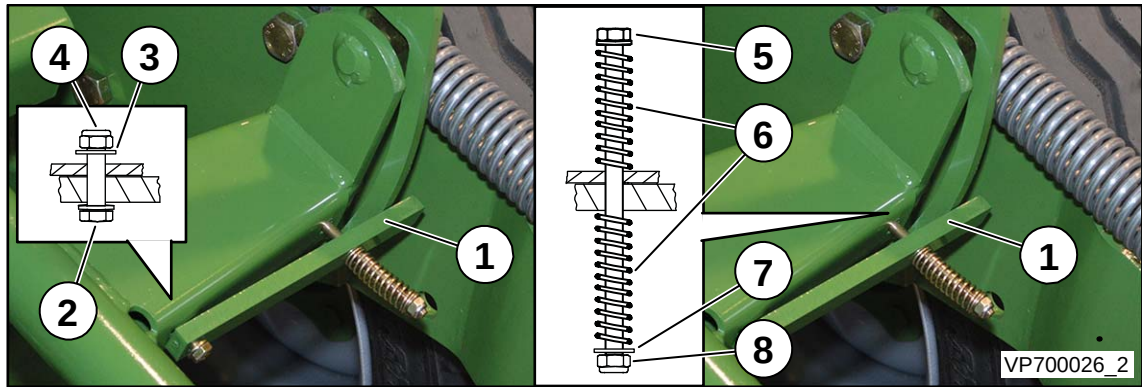


Fig. 27

- Fitting the strip (1) on the right and left of the bale ejector:
Secure with a screw (2), washer (3) and locknut (4).
Secure with a screw (5), springs (6), washer (7) and locknut (8).



Note

The screw (2) may not be securely tightened, but must be flush with the locknut (4).

- Place the bale ejector on the machine.

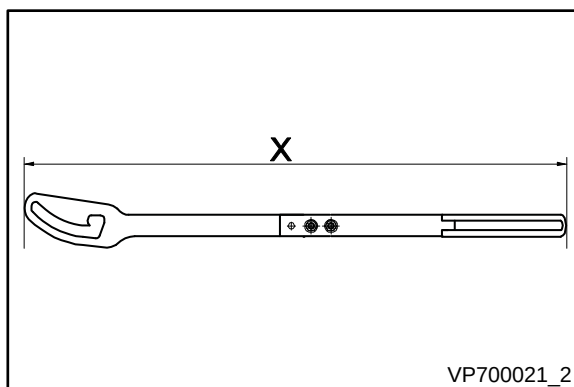


Fig. 28



Note

The length of the linkage depends on the machine type.

Fortima V 1500 (MC) = linkage X = 1991 mm
Fortima V 1800 (MC) = linkage X = 2266 mm

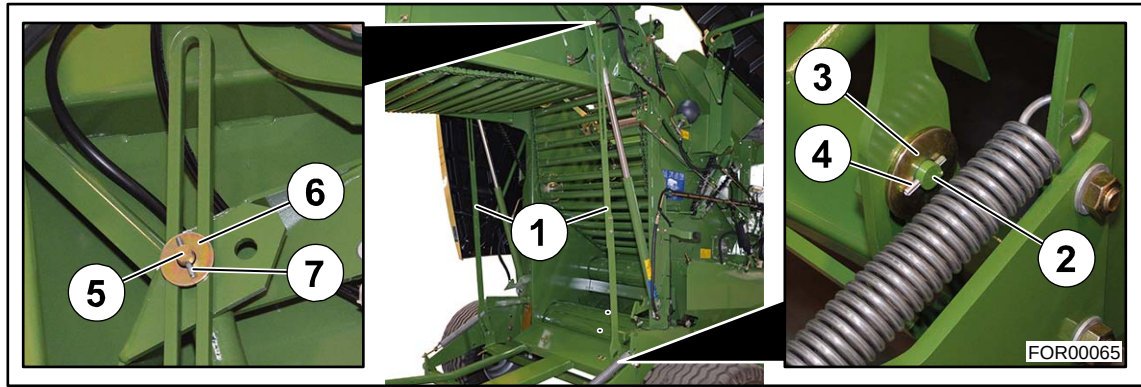


Fig. 29

- Push the linkage (1) on the right and left onto the stud bolts (2) on the frame and secure with a washer (3) and clamping sleeve (4).
- Push the linkage (1) on the right and left onto the stud bolts (5) on the tailgate and secure with a washer (6) and clamping sleeve (7).



DANGER! - Damage to the hydraulic hoses when closing the side guards!

Effect: Injuries or damage to the machine.

- Fastening hydraulic hose lines with cable ties.
- Check hydraulic hose lines for damage regularly.



DANGER! - Damage to the hydraulic hoses when closing the side guards!

Effect: Injuries or damage to the machine.

- Fasten hydraulic hose lines with cable ties in that way, that no contact exists to the hydraulic lines when the tailgate is opened and closed.

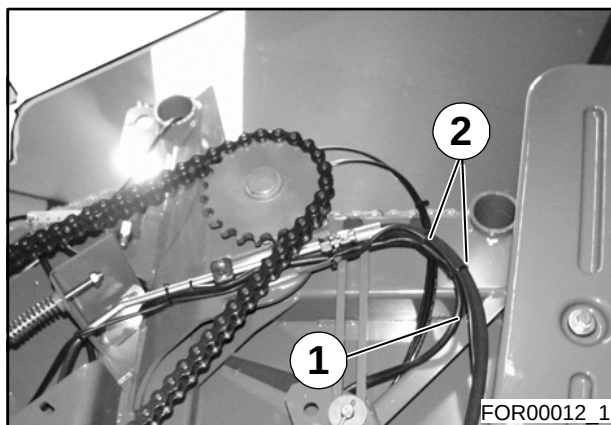


Fig. 30

- Fasten hydraulic hose lines (1) on both sides of the machine with cable ties (2) so that the hydraulic hose lines cannot be damaged when closing tailgate and side guards.

Commissioning

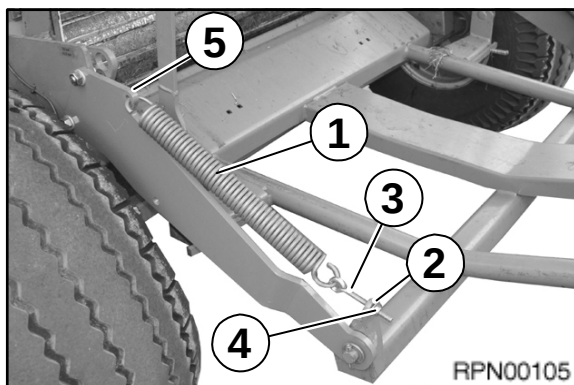


Fig.31

- Hook the tension spring (1) into the link (5) on the holding plate.
- Hook the eye bolt (3) into the tension spring (1) and guide it through the bore hole (2).
- Secure with disc and nut (4).
- Tighten the nut (4) until the bale ejector swings safely into the basic setting after depositing the bale.

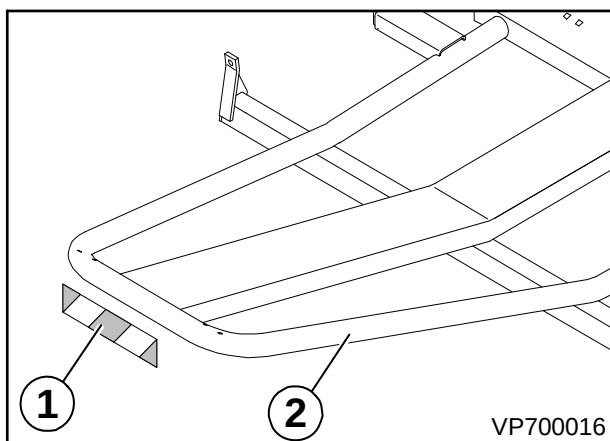


Fig.32

- Attach the safety sheet (1) in the middle on the rear cross bar of the bale ejector (2).

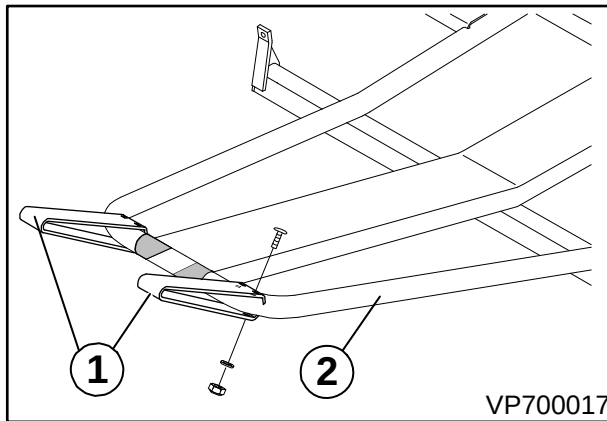
Assemble spacers (Fortima V 1800 (MC))

Fig. 33

Tyres: **11.5/80-15.3; 15.0/55-17**
19.0/45-17; 500/50-17

- Install spacers (1) with coach bolts, discs and nuts to the bale ejector (2).

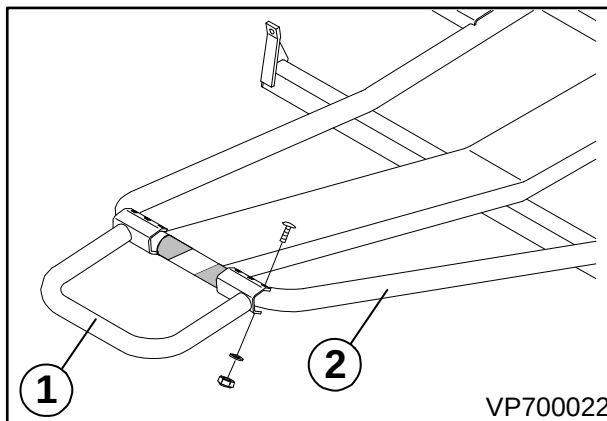


Fig. 34

Tyres: **600/50 -22,5**

- Install spacers (1) with coach bolts, discs and nuts to the bale ejector (2).

Commissioning

6.3 Adjusting the drawbar height



Note

Before aligning the machine and adapting the height of the drawbar, the tyre pressure must be checked and adapted to the value for the existing tyre type which is recommended in the tyre air pressure table (refer to chapter entitled "Maintenance"), if necessary.

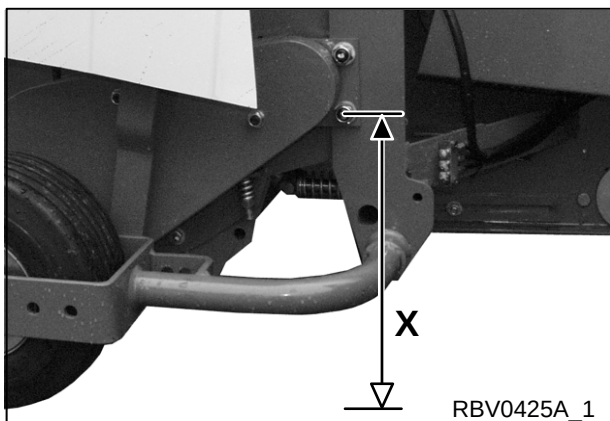


Fig. 35



Note

To guarantee optimum working, the machine has to be hitched in a way that the dimension **X** is approx. 530 mm. The dimension **X** is measured from the ground up to the middle of the lower head of the screw and has to be adjusted to the respective harvesting conditions as well as the tyre size.

Adapting the height of the towing eye to the height of the tractor hitch (perform setting on both sides):



Note

Before starting the adjustment, set the machine on the parking support and uncouple the tractor.

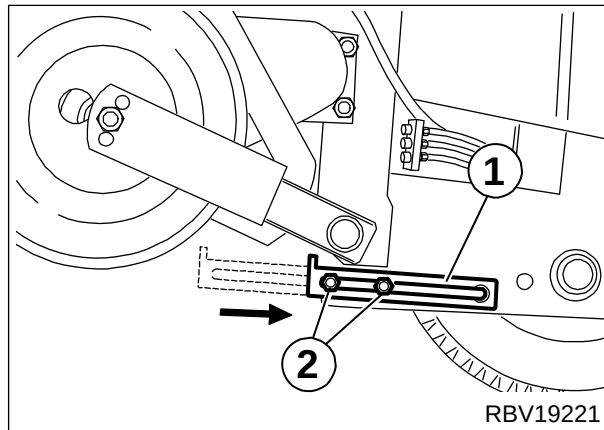


Fig. 36

1. Reset Pick-up transport-fuse
 - Raise Pick-up (tractor hydraulics).
 - Release nuts (2).
 - Push height restriction (1) back.
 - Tighten nuts (2).
2. Activate control valve for "lower pick up"



Fig. 37

3. Adjusting position of the Pick-up
 - Wind parking support (1) up or down until dimension X = approx. 530 mm is reached.
(from the ground to the middle of the lower screw head)

Commissioning

- Shut down and safeguard the machine, see chapter Safety -> Safety routines, "Shutting down and safeguarding the machine".

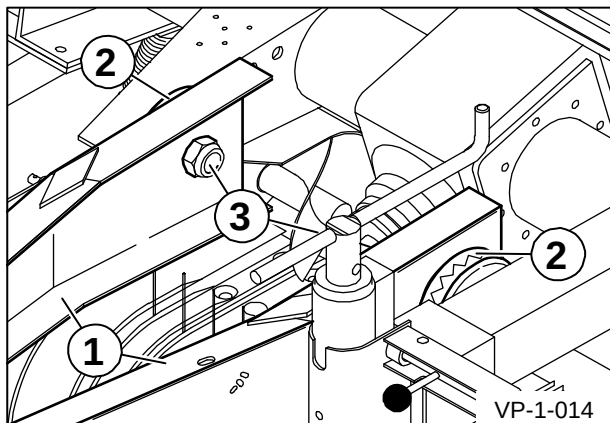


Fig. 38

4. Unscrew the locknuts (3) until the drawbar (1) in the lock washer connection (2) turns.
5. Adapt the drawbar (1) to the height of the tractor hitch.

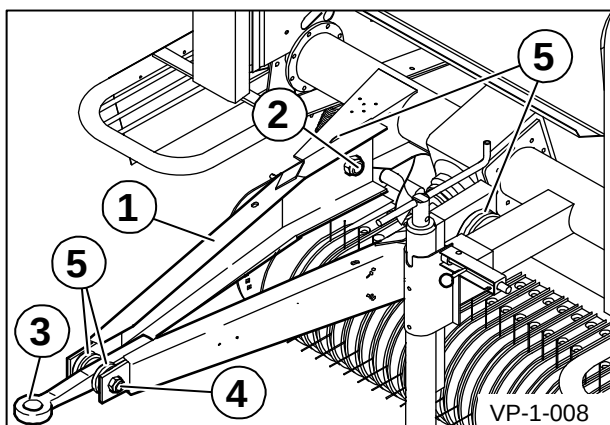


Fig. 39

6. Unscrew the screw connection (4).
7. Align the towing eye (3) parallel to the ground.
8. Tighten the screw connections (2) and (4) with an appropriate torque.



Note

Serrated washers (5) must mesh.
Tighten screw joints after 10 operating hours!



Note

Observe tightening torques (refer to chapter Maintenance "Tightening Torques").

6.4 PTO shaft

6.4.1 Attaching the guard cup for universal shaft

- Shut down and safeguard the machine, see chapter Safety -> Safety routines, "Shutting down and safeguarding the machine".

**WARNING! – Danger of entanglement in the PTO shaft.**

Effect: Risk of injury caused by entanglement of loose long hair, jewellery or loose clothing.

- Do not operate machine without protective cap.

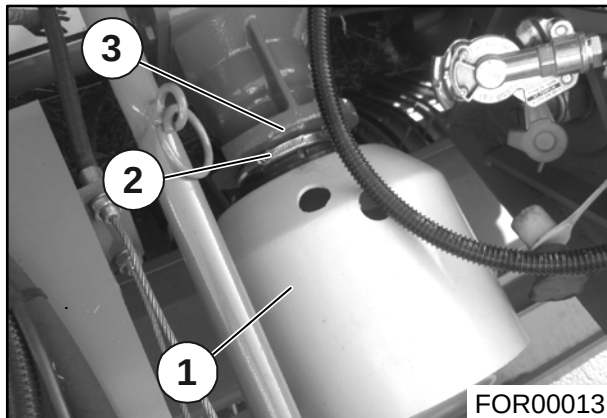


Fig. 40

- Remove guard cup (1) out of the twine box.
- Push guard cup (1) above the P.T.O. shaft at transfer gearbox (3) and install it with its hose clamp (2) at the transfer gearbox (3) in that way, that the great bore hole is all the way up around the circumference of the guard cup (1).

Commissioning

6.4.2 Mounting the PTO shaft on the machine side

- Shut down and safeguard the machine, see chapter Safety -> Safety routines, "Shutting down and safeguarding the machine".



Danger! - Observe drive speed

Effect: Danger to life or serious injuries

- This machine is driven at a maximum PTO speed of 540 rpm.



Note

When mounting the universal shaft, make sure that the overload protection system will be installed on the side of the machine.

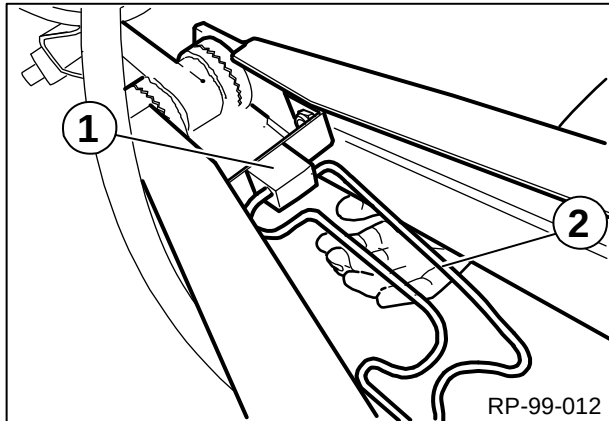


Fig. 41

- Switch off the engine and remove the ignition key.
- Assemble the PTO shaft bracket (1) and secure the PTO shaft support (2).

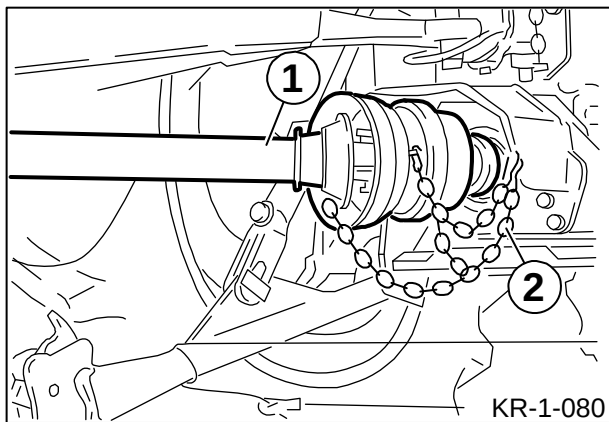


Fig. 42

- Push on the PTO shaft (1) with overload protection on the machine side until the protection mechanism locks into place or the PTO shaft can be screwed together (see PTO shaft manufacturer's operating instructions).
- Secure the PTO shaft guard retaining chains (2) on the machine side.

Commissioning

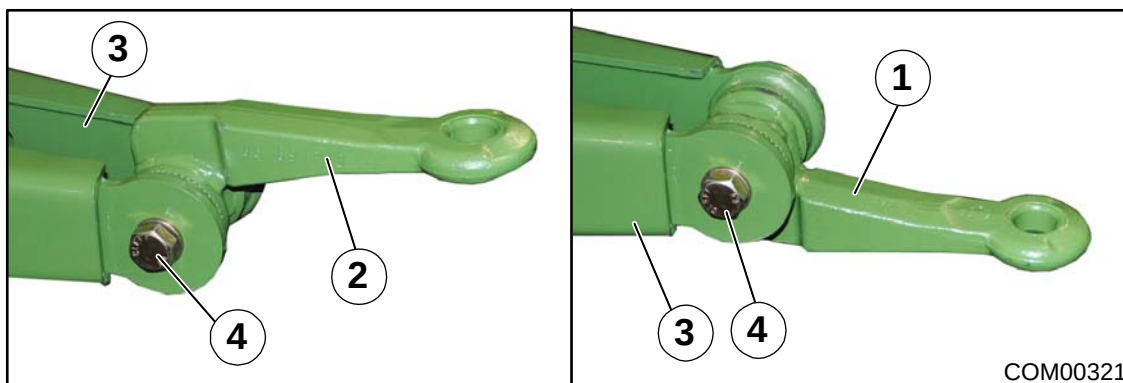


Fig. 43



Note

To achieve greater PTO shaft freedom, the towing ring can be mounted in position (1) or (2) on the drawbar (3).

- Use a suitable tool to loosen the screw connection (4).
- Rotate the towing ring to the desired position and use the screw connection (4) to mount it on the drawbar (3).

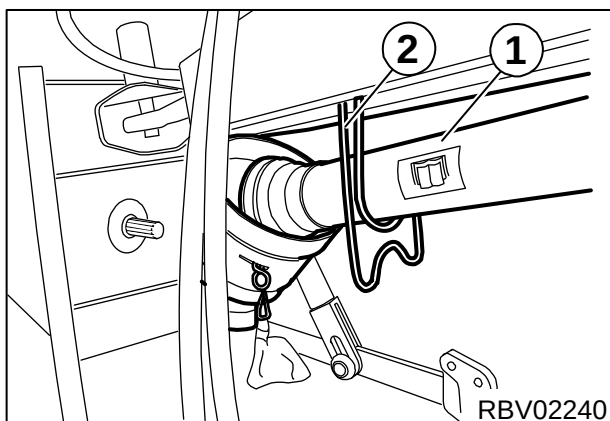


Fig. 44

- Place the PTO shaft (1) inside the PTO shaft support (2).

6.4.3 Length adjustment

- Shut down and safeguard the machine, see chapter Safety -> Safety routines, "Shutting down and safeguarding the machine".

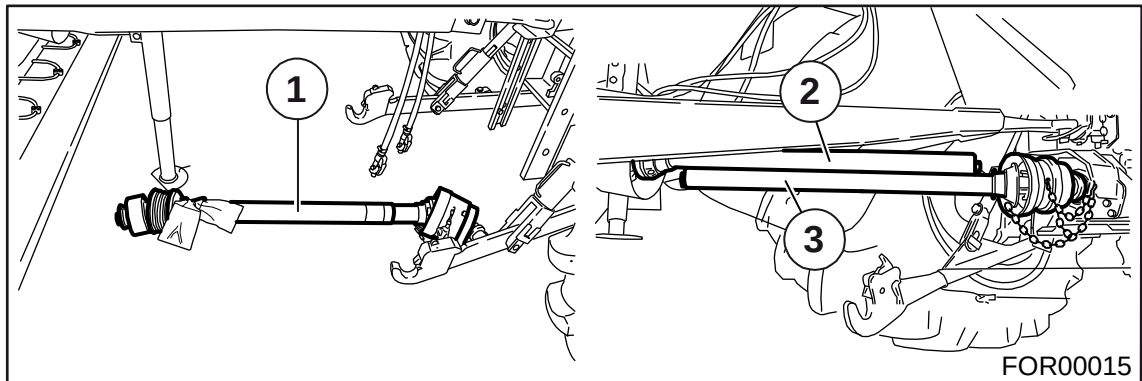


Fig. 45

To adapt the length of the universal shaft, hitch the machine onto the tractor. The shortest position of the universal shaft is reached in close cornering.

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.

Commissioning

6.5 Hose holder assembly

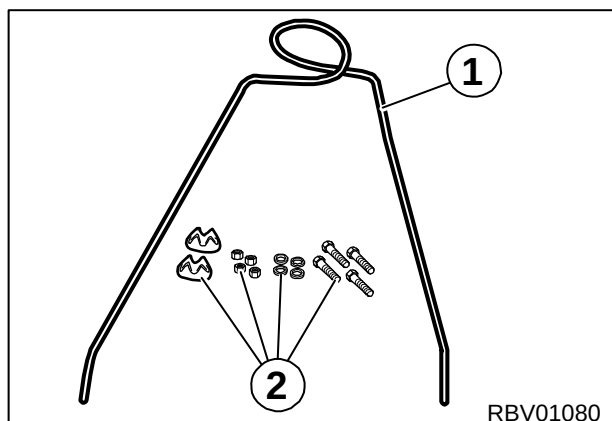


Fig. 46

- The hose holder (1) is mounted on the drawbar with the fastening materials (2).

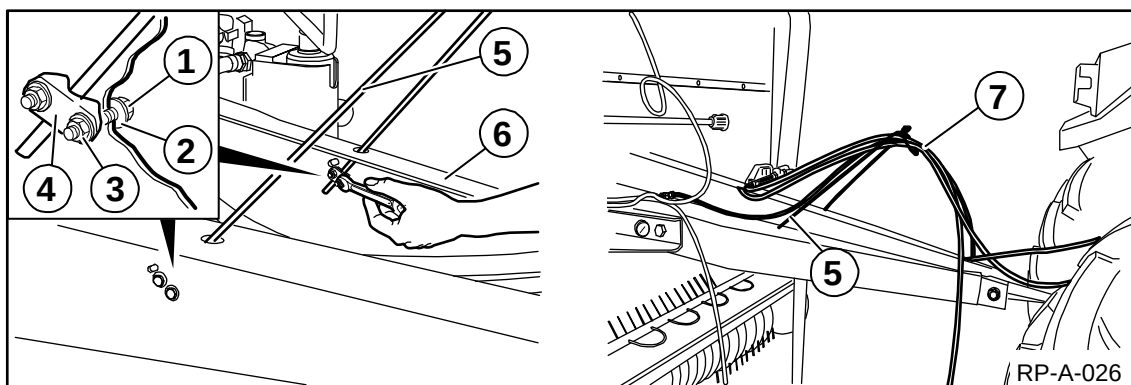


Fig. 47

- Guide the hose holder (5) through the oblong holes on the drawbar (6).
- Fasten the hose holder onto the drawbar with clamps (4), screws (1), washers (2) and self-locking nuts (3).
- Guide the hoses (7) through the eye of the hose holder (5).

6.5.1 Net brake

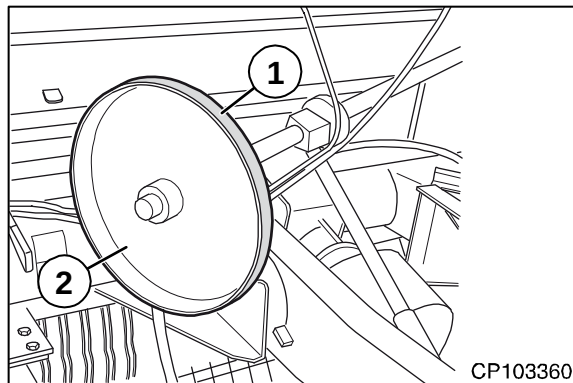


Fig. 48

Before starting up for the first time, neatly remove the protective tape from the brake surface (1) of the net brake disc (2).

6.6 Attaching the Triangle Spotlights

Fortima V 1500 (MC)/Fortima V 1800 (MC)

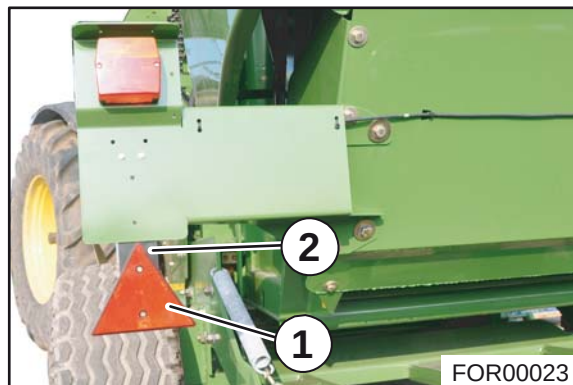


Fig. 49



Note

When using a registration plate as well as the wheels 600/50-22,5, the triangle spotlights (1) right/left on the provided pendulum (2) must be assembled.

To do this:

- Remove the triangle spotlight (1) from the rear lamp support of the machine
- Take the pendulums (2) out of the small parts bag and install them by using the provided screws on the rear lamps support
- Install the triangle spotlight (1) on the pendulum (2)
- Check the functionality of the triangle spotlights (1)

Start-up

7

Start-up



WARNING!

If the basic safety instructions are not followed, people may be seriously injured or killed.

- To avoid accidents, the basic safety instructions in the chapter Safety must have been read and followed, see chapter Safety "Basic safety instructions".



WARNING!

If the safety routines are not adhered to, people may be seriously injured or killed.

- To avoid accidents, the safety routines in the chapter Safety must be read and followed, see chapter Safety "Safety routines".

7.1 Connect the machine to the tractor

- Shut down and safeguard the machine, see chapter Safety -> Safety routines, "Shutting down and safeguarding the machine".

The machine comes standard equipped with a hitch of Ø 40 mm (DIN 11 026). Depending on the specific requirement, the following hitches are also available:

- Ball-head hitch (K 80),
- Rotating hitch (export only),
- Hitch connection (export only).

Hitch and secure the machine according to regulations on the hitch of the tractor.

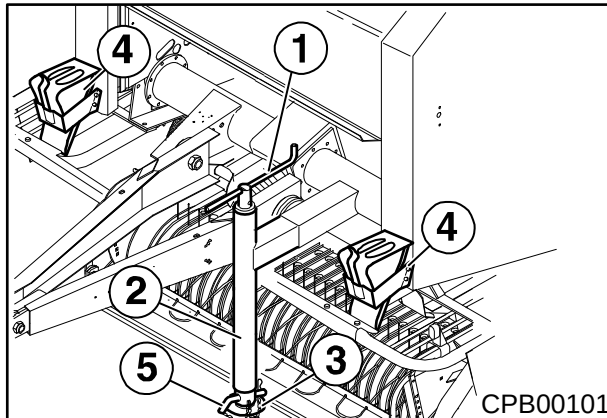


Fig. 50

To raise the parking support:

- As soon as the machine is connected to the tractor, turn the crank (1) several revolutions clockwise until there is no more weight on the parking jack (3).
- Withdraw the locking bolt (5) on the lower part of the parking support (2), push in the parking support (2) and secure it in position with the locking bolt (5).
- Then crank the parking support (2) up all the way.
- Turn the parking jack (3) so that the flat side is facing the pick-up.

Start-up

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.



WARNING! – Hydraulic hose lines are subject to ageing

Effect: Danger to life or serious injuries

The characteristics of the lines change depending on pressure, heat load and the effect of UV rays.

The date of manufacture appears on the hydraulic hoses. This way the age can be ascertained quickly.

By law the hydraulic lines must be replaced after six years.

Use original spare parts when replacing hydraulic hoses!



Caution! - Soiling of the hydraulic system

Effect: Damages to the machine

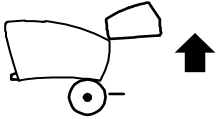
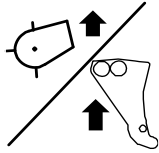
- When connecting the quick couplings, ensure that these are clean and dry.
 - Note chafing areas or points of contact.
-

7.2.2 Connecting the hydraulic lines

Fortima F

To perform the following hydraulic functions, the tractor requires:

- 2 single-acting control units

Control	Function
Single-acting control unit (red 1+) 	Opening/closing the tailgate • Pressure (red 1+): Open tailgate • Float position (red 1+): Close tailgate
Single-acting control unit (yellow 3+) 	Raising/lowering the pick-up or blade base (depending on preselected setting on control unit) • Pressure (yellow 3+): Raise the pick-up or blade base • Float position (yellow 3+): Lower the pick-up or blade base



Note

Connect hydraulic hoses correctly.

- The hydraulic hoses are marked with numbers and coloured dust caps.

- Set the single-action control units of the tractor to float position.
- Turn off the tractor and secure it against the possibility of rolling back.
- Connect the hydraulic coupling (red 1+) of the machine to a single-action control unit of the tractor.
- Connect the hydraulic coupling (yellow 3+) on the machine to a single-acting control unit on the tractor.



Note

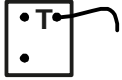
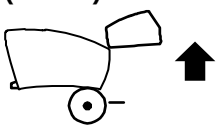
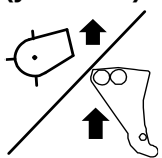
For further information about connecting the hydraulic lines, refer to the tractor operating instructions.

Start-up

Fortima V

To perform the following hydraulic functions, the tractor requires:

- 3 single-acting control units

Control	Function
(blue T) 	Tank - free return • Connection to free return to the tank
Single-acting control unit (red 1+) 	Opening/closing the tailgate • Pressure (red 1+): Open tailgate • Float position (red 1+): Close tailgate
Single-acting control unit (yellow 3+) 	Raising/lowering the pick-up or blade base (depending on preselected setting on control unit) • Pressure (yellow 3+): Raise the pick-up or blade base • Float position (yellow 3+): Lower the pick-up or blade base



Note

Connect hydraulic hoses correctly.

- The hydraulic hoses are marked with numbers and coloured dust caps.

- Set the single-action control units of the tractor to float position.
- Turn off the tractor and secure it against the possibility of rolling back.
- Connect the hydraulic coupling (blue T) of the machine to a single-action control unit of the tractor.
- Connect the hydraulic coupling (red 1+) of the machine to a single-action control unit of the tractor.
- Connect the hydraulic coupling (yellow 3+) on the machine to a single-acting control unit on the tractor.



Note

For further information about connecting the hydraulic lines, refer to the tractor operating instructions.

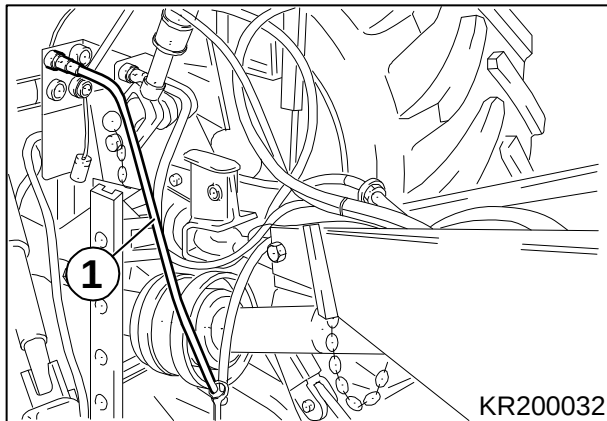
7.3 Hydraulic brake (Export)

Fig. 51

A hydraulic brake is provided for certain export versions. In this version, the corresponding hydraulic hose is connected with the control valve on the tractor side. The brake is activated by actuating the tractor brake pedal.

7.4 Hydraulic brake (auxiliary brake)

For certain operating conditions it is advisable to install a hydraulic auxiliary brake to machines which normally do not require a separate brake for road transport.

These models require an additional single-action control valve. The brake is activated by actuating the control valve.

The pressure can be adjusted with the machine's pressure limiting valve. The pressure limiting valve is set to approx. 50 bar.

Start-up

7.4.1 Install the PTO shaft

- Shut down and safeguard the machine, see chapter Safety -> Safety routines, "Shutting down and safeguarding the machine".



Caution! - Changing the tractor

Effect: Damage to the machine

When using the machine for the first time and whenever changing the tractor Check PTO shaft for the correct length. If the length of the PTO shaft does not match the tractor, always observe the chapter entitled "Adjusting the length of the PTO shaft".



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!

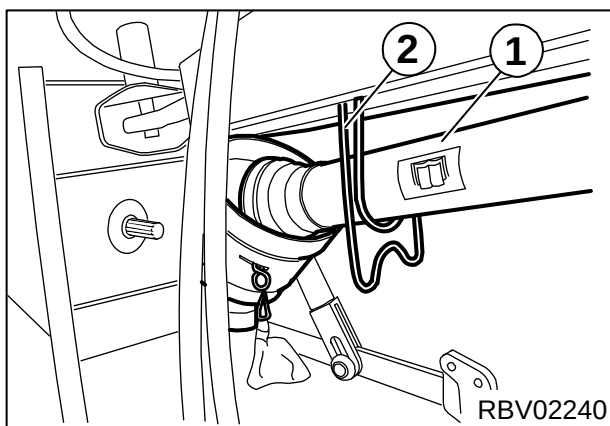


Fig. 52

- Remove the universal shaft (1) from the PTO shaft support (2)

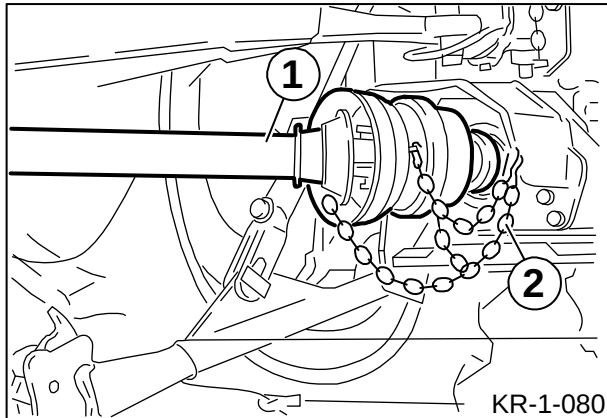


Fig. 53



CAUTION!

Contact with parts of the tractor or the machine may result in damages to the machine or to the universal shaft

- Make certain there is sufficient free space in the swivel range of the PTO shaft in all operating states.

Tractor Side:

- Slide universal shaft (1) on the tractor PTO shaft and secure it
- To prevent the PTO shaft from turning, guide the safety chain (2) under the universal shaft guard and insert it onto the tractor



ATTENTION! - Universal shaft not correctly attached.

Effect: Damage to the universal shaft or to the machine

- Ensure that the safety device of the universal shaft is locked into place after installation.
- Use only the universal shaft supplied by the factory.

Start-up

7.5 Compressed Air Connections for the Compressed Air Brake



WARNING!

Danger to life due to failure of the brake system or unexpected movement of the machine.

Pneumatic lines that become detached or worn through pneumatic lines will cause the brake system to fail. Thus there is a risk of serious injuries or death.

- Lay the pneumatic lines so that they do not rub or tension. Furthermore they should not be jammed or touch other parts (e.g. tractor tyres).

The machine may move unintentionally if the order of the pneumatic lines is interchanged when connecting them. Thus there is a risk of serious injuries or death.

- Connect the yellow coupling head first.
- Then connect the red coupling head.
- After having connected the quick couplings, check that they fit perfectly.

The machine can optionally be equipped with a dual-line compressed air braking system.

The coupling heads are connected to the machine for attachment of the reservoir (red) and brake line (yellow) of the tractor.

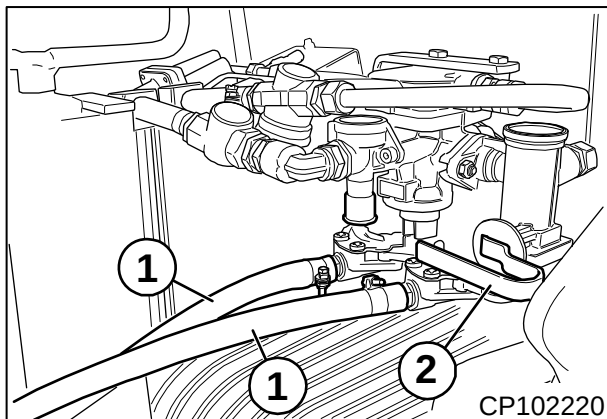


Fig. 54

- Insert the coloured compressed air hose couplings (1) into the correspondingly coloured couplings on the tractor.



Note

Always connect the yellow coupling head first, then the red one. Detach the couplings in reverse order.



WARNING!

Risk of accident due to insufficient brake force.

- For road travel, driving is permitted in position (2) "Full load" only.
- In the "Half load" or "Zero load" position, the braking effect can be adapted (reduced), e.g. when working on wet meadows.

7.6 Electrical connections

- Shut down and safeguard the machine, see chapter Safety -> Safety routines, "Shutting down and safeguarding the machine".

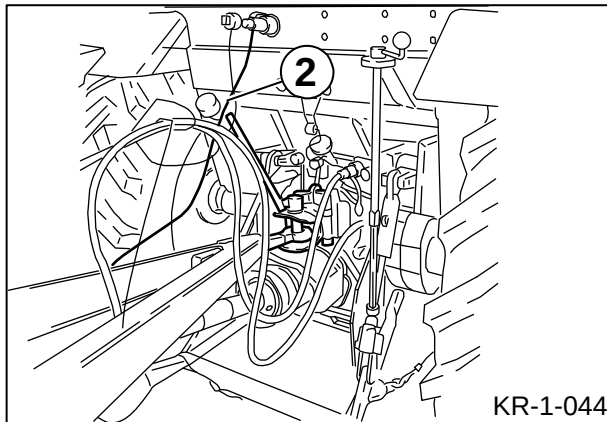


Fig. 55

- Connect the connection cable (2) for the lighting to the 7-pin plug-in connector of the tractor electrical system
- Position the connection cable (2) so that it will not come in contact with the wheels
- Install the control console so that it is easily visible to the driver
- Connect the power supply cable (according to DIN 9680) to the 3-pin power supply socket



Note

Request the 3-pin power supply socket with connection cable from the spare parts service (spare parts no. 0303-914-0) if the connection is not available on the tractor.

Start-up

7.6.1 Connecting the terminal (on tractors without ISOBUS system)

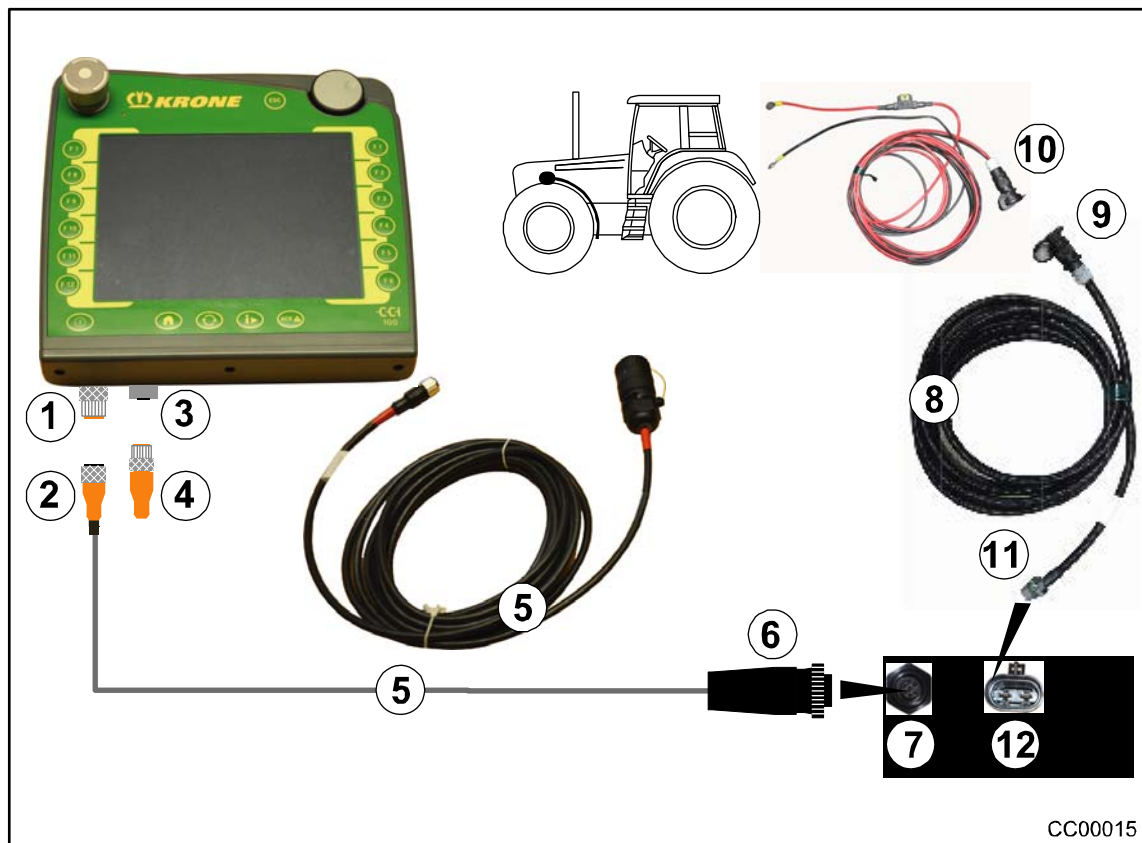


Fig. 56

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

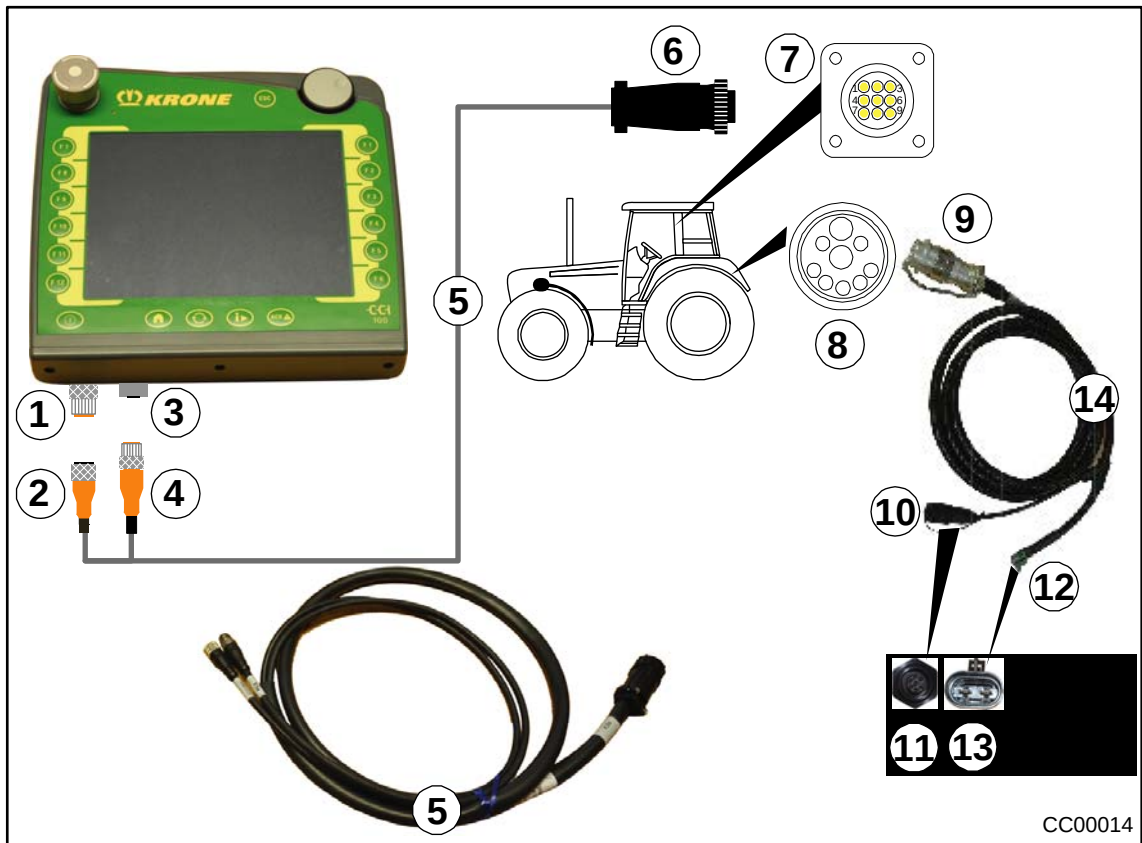
7.6.2
Connecting the Terminal (on tractors with integrated ISOBUS system)


Fig. 57

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.

Start-up

7.7 Using the safety chain

**WARNING!**

When using a wrongly dimensioned safety chain, the safety chain may tear if the machine loosens unintentionally. This can result in serious accidents.

- Always use a safety chain with a minimum tensile strength of 89 kN (20.000 lbf).

**WARNING!**

If the safety chain is layed so that it is too tight or too loose, then it may tear. As a result, serious injuries or damage to tractor and machine may be caused.

- Position the safety chain so that it does not tension when cornering. Also make sure when laying it that it does not touch the tractor wheels or other parts of tractor or machine.

**Note**

Using the safety chain

Attachment of the safety chain is not stipulated in all countries.

The safety chain is used as an additional safety precaution for trailed devices, should they become detached from the drawbar during transport. Attach the safety chain with the respective mounting parts to the hitching device on the tractor or to another specified connection point. The safety chain should have just enough play to be able to go around curves.

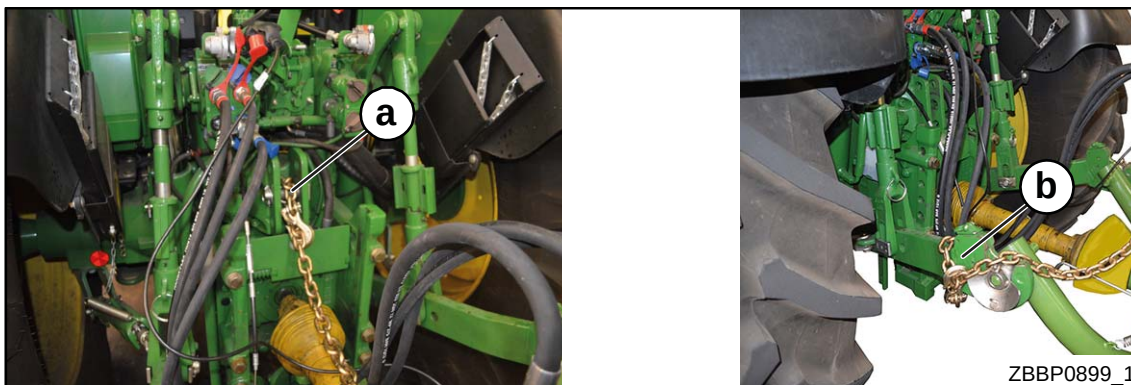


Fig. 58

- Install safety chain (1) on an eligible position (for example: a or b) on the tractor.

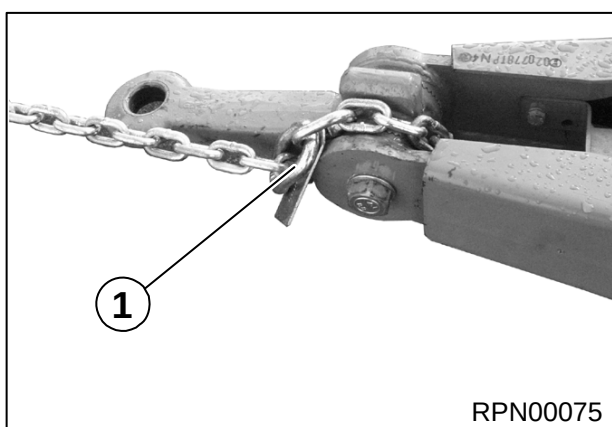


Fig. 59

- Install the safety chain (1) on the machine.

KRONE Medium Operation Panel

8 KRONE Medium Operation Panel

Fortima F 1250 (MC) / F 1600 (MC)



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.

8.1 Overview



Fig. 60

- | | |
|---|---|
| 1 Baling pressure warning lights left/right | 5 Momentary switch for tying start |
| 2 Warning light for operation panel ON/OFF | 6 Zero setting of blades switch/pick-up |
| 3 ON/OFF switch | 7 Power supply line |
| 4 Net tying/twine tying switch | 8 Control line to machine |

8.2 Switching Operation Panel ON/OFF

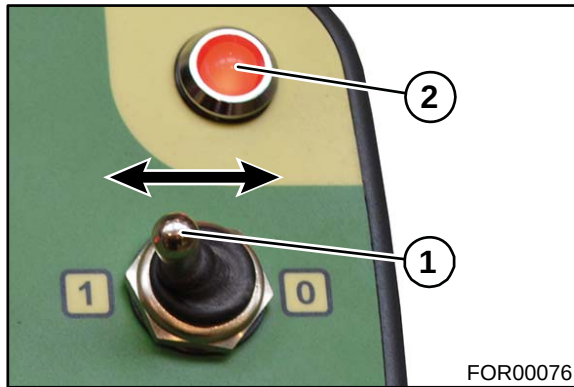


Fig. 61

- Use a magnet to fasten the operation panel in the tractor where it can be seen by the driver.
- Connect operation panel to power supply (12 V).
- To switch on operation panel, move switch (1) to 1.
The warning light (2) lights up. The tying motor moves to basic position.
- To switch off operation panel, move switch (1) to 0.
The warning light (2) goes out.

8.3 Net Tying / Twine Tying

8.3.1 Selecting Net Tying or Twine Tying

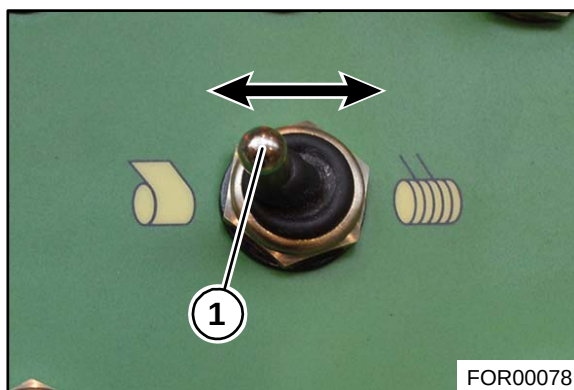


Fig. 62

- To select net tying, move switch (1) to .
- To select twine tying, move switch (1) to .

KRONE Medium Operation Panel

8.3.2 Setting the Number of Net Layers

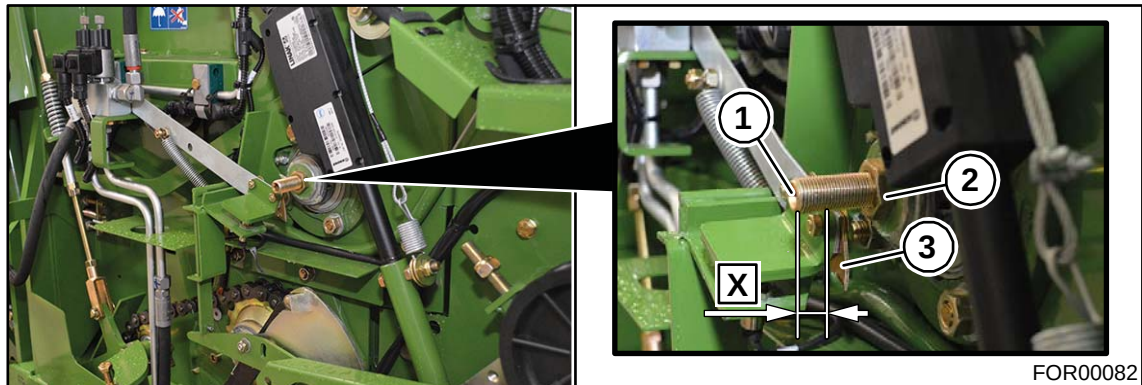


Fig. 63

The setting screw (1) is located on the right-hand machine side behind the side guard. The number of net layers is set by means of this setting screw.

- Make sure that the tip (3) of spring rail is not on the setting screw.
- To loosen the counter nut (2) and to screw it out, hold the setting screw (1) by using hexagon wrench.

Note: This is a left-hand thread!

The further the counter nut (2) is screwed out and the further the distance x is reduced, the less the round bale is wrapped with net.

Distance x is the dimension between putting on the spring rail tip (3) and the outer edge of the setting screw.

Distance x		Number of net layers
Fortima F 1250	Fortima F 1600	
19 mm	23 mm	2
28 mm	34 mm	3

- Check the values from the upper table on the ejected round bale and correct them, if necessary.

8.3.3 Setting the Number of Twine Wraps

The number of twine wraps is set on the stepped pulley (1) in the twine box.

For further information on twine tying and the related parts, refer to chapter Operation "Double Twine Tying (medium operation panel)".

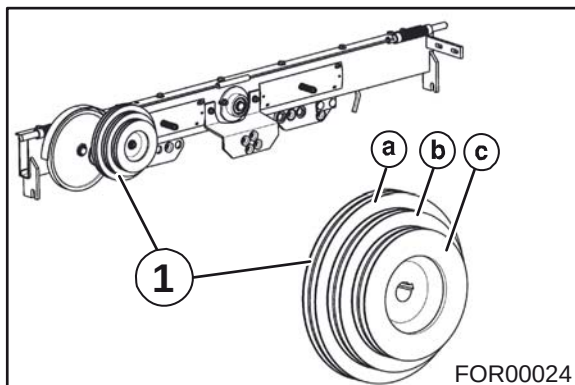


Fig. 64

Length of crop	Ø of stepped pulley (1)	Number of wrappings
small	big (a)	large
medium	medium (b)	medium
long	short (c)	small

The diameter of the stepped pulley (1) must be smaller the longer the crop. Thus the round bale is wrapped the less with twine.

KRONE Medium Operation Panel

8.4 Operating Bale Counter

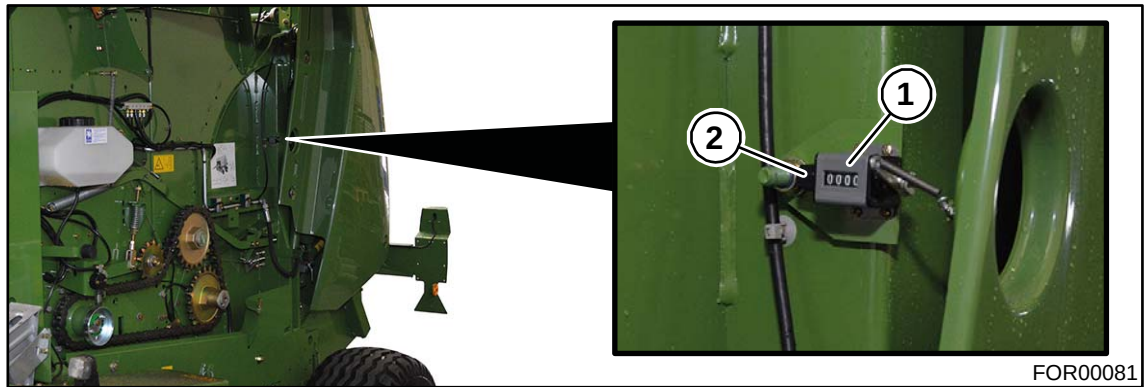


Fig. 65

The bale counter (1) is actuated every time the tailgate is opened. The bale counter (1) is located on the left-hand machine side behind the side guard.

Resetting bale counter to 0:

- Press knurled head screw (2) and hold it down until the bale counter displays 0000.

8.5 Switching between Zero Setting of Blades Operation and Pick-up Operation

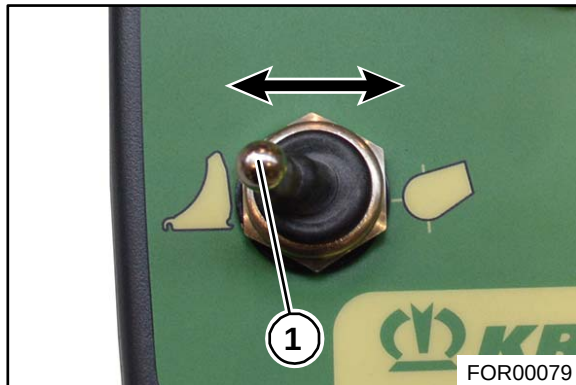


Fig. 66

- To operate the pick-up, move switch (1) to .
- To operate zero setting of blades, move switch (1) to .

With switched on zero setting of blades

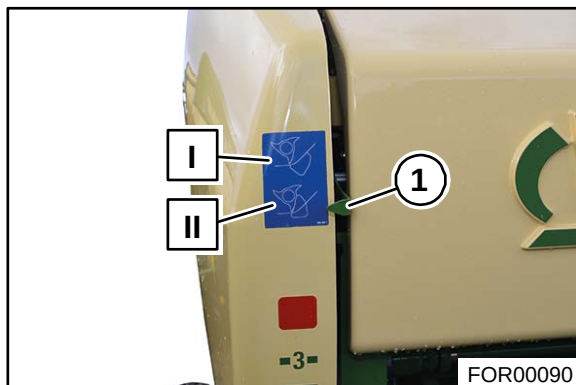


Fig. 67

The indicator for zero setting of blades (1) on the right-hand machine side at front indicates whether the cutting unit is switched on or switched off:

Position I: Cutting unit switched off

Position II: Cutting unit switched on



Note

The indicator for zero setting of blades (1) also indicates during baling whether the blades have been switched off by influence of foreign bodies (**position I**) or not.

KRONE Medium Operation Panel

8.6 Displaying Baling Pressure

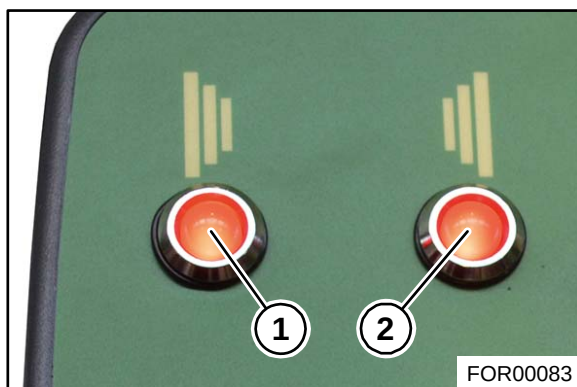


Fig. 68

The warning lights (1) and (2) indicate how the baling pressure is built up. The warning lights (1) and (2) light up until the set baling pressure is reached on both sides.

The baling pressure must be reached both on left (1) and on right (2) in the round bale. The tying can only be started when both warning lights go out, refer to chapter "Starting Tying".

To set the baling pressure, refer to chapter Operation "Setting the Baling Pressure".

8.7

Starting Tying

Starting tying manually (manual mode)

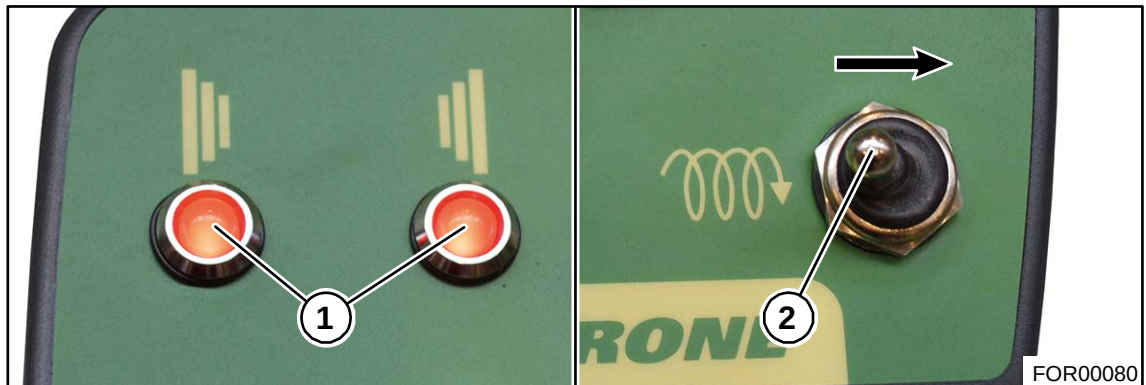


Fig. 69

As soon as the round bale has reached the preselected baling pressure, a horn is sounded and the both warning lights (1) go out. In manual mode, the tying or wrapping process must be started manually:

- Actuate the momentary switch (2) in the direction of arrow to the right until net or twine is captured by the round bale and drawn by it.
- Release momentary switch (2).

A horn is sounded when the tying process is completed. After that:

- Open tailgate and eject round bale.

KRONE Medium Operation Panel

Starting tying automatically (automatic mode)

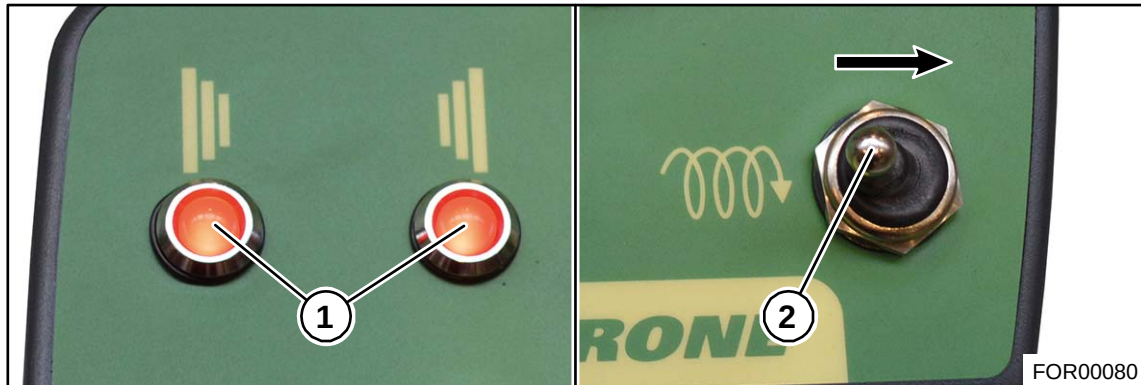


Fig. 70

As soon as the round bale has reached the preselected baling pressure, a horn is sounded and the both warning lights (1) go out. In automatic mode, the tying or wrapping process starts automatically after the set period of time has expired. The period of time defines the time the tying motor requires to transport the twine or net to the round bale. If the period of time which was selected is too short, the round bale might not be tied correctly with twine or net.

To set the period, activate the automatic mode:

Prerequisite:

The operation panel is switched off.

- Actuate momentary switch (2) in direction of travel to the right and hold it down and switch on operation panel at the same time.
A short beep can be heard.
- Keep momentary switch (2) pressed in direction of arrow to the right for the duration of the delay until tying process is started automatically.
The shortest possible period of time is recommended, e.g. approx. three seconds for net or approx. six seconds for twine.
- Release momentary switch (2).
A short beep can be heard. The automatic mode is activated.

A horn is sounded when the tying process is completed. After that:

- Open tailgate and eject round bale.



Notes

- The automatic mode is deactivated when the operation panel is switched off.
- Every time when activating the automatic mode, the period of time must be newly set.
- The tying process can always be started manually.

8.8 Testing Sensors for Bale Firmness

If the baling pressure is not correct, the following sensors must be tested for proper function:

- Sensor on right for bale firmness
- Sensor on left for bale firmness

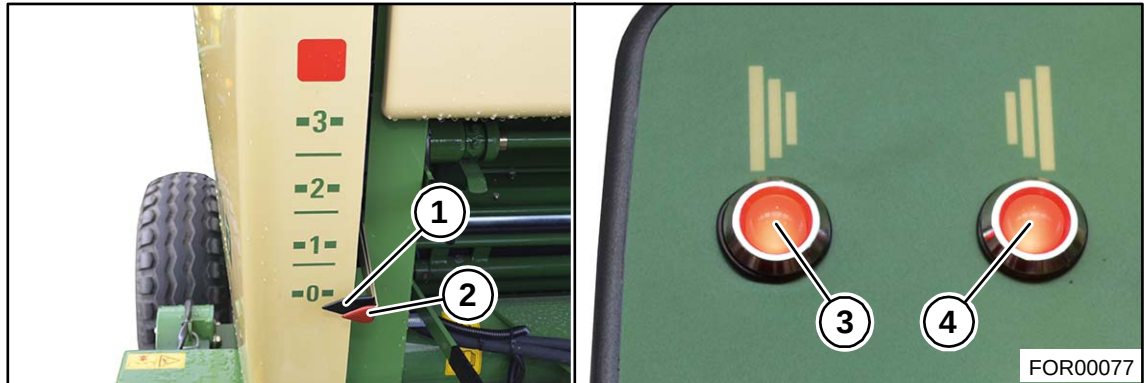


Fig. 71

Sensor on right for bale firmness

- Raise the baling pressure indicator (1) on left at front side of round baler.
The warning light (4) must go out.

If the warning light (4) does not go out:

- Set sensor on right for bale firmness, refer to chapter Maintenance - "Setting the Sensors".

Sensor on left for bale firmness

- Raise the baling pressure indicator (2) on left at front side of round baler.
The warning light (3) must go out.

If the warning light (3) does not go out:

- Set sensor on left for bale firmness, refer to chapter Maintenance - "Setting the Sensors".

KRONE operation terminal Beta

9 KRONE operation terminal Beta



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.

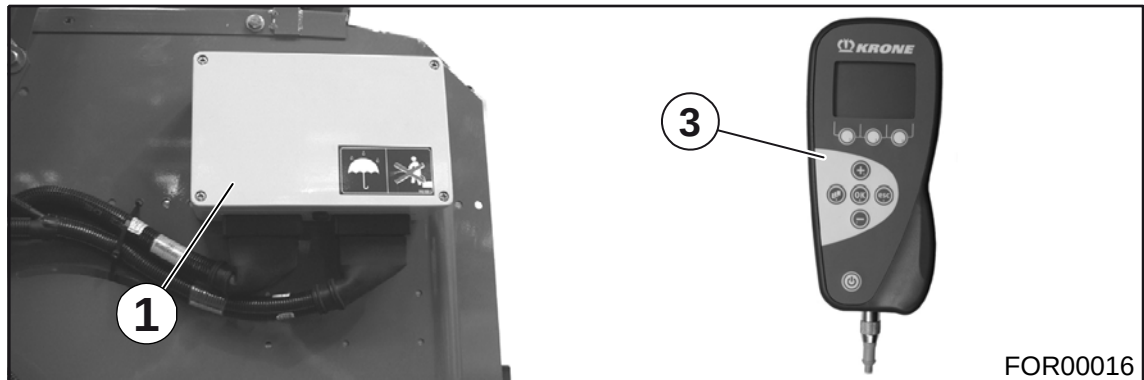


Fig. 72

The electronic equipment of the machine consists essentially of the job computer (1), the control unit (3) and the control and function elements.

The job computer (1) is located on the front right of the machine under the side hood.

Its functions are:

- Bale counter
- 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.

9.1 Attachment of control unit

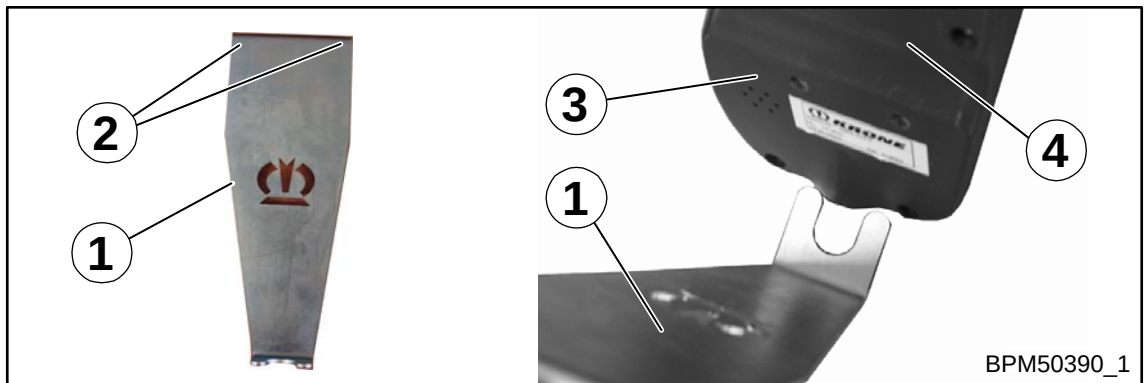


Fig. 73

Mount the control unit with its support (1) where it can be seen by the driver.

Direct fastening

- Fasten the support (1) using the drill holes (2) already present.
- The control unit (3) is fixed by the magnetic plate (4) on the support (1).

9.1.1 Connecting Control Unit



Danger! - Failure of control unit

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

Make sure during assembly that the connection cables are not tight and that they do not come in contact with the tractor wheels.

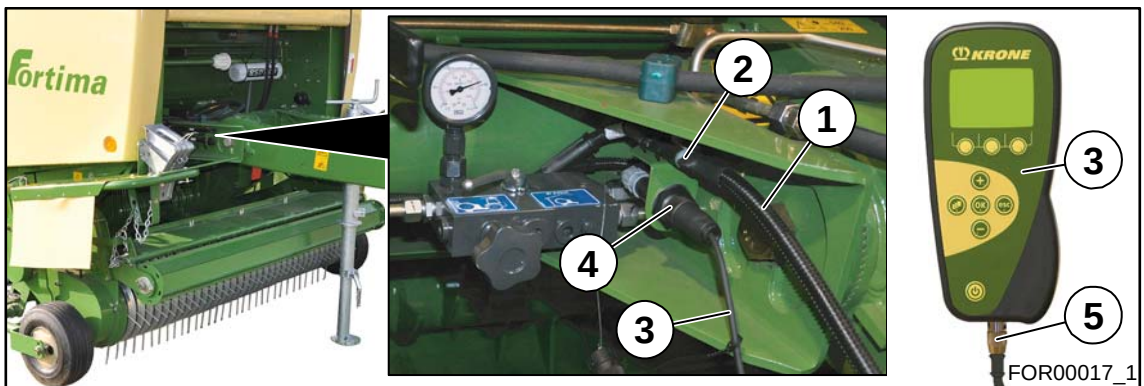


Fig. 74

- Connect power supply cable (1) on tractor side to the 3-pin power supply socket (DIN 9680) and connect it on machine side with Delphi plug (2).
- Connect cable (3) on machine side to bushing (4) as well as to bushing of control unit (5).



Note

Extension cables for the terminal can be ordered under the following spare part numbers:

- 303 174 0 (2500 mm length)
- 302 959 0 (5000 mm length).

KRONE operation terminal Beta

9.2 Description of the keys



Fig. 75

Key	Description
	The functions shown in the bottom line of the display are operated by pressing the keys. The key is without function if there is no symbol above the key.
	
	
	Menu level is called by pressing the key.
	Pressing these keys causes settings to be changed. Furthermore, they can be used to select the desired menu in the menu level.
	
	Press this key to return to the previous screen or the previous menu level. Pressing the key and holding it down brings up the basic screen.
	Settings are saved or a selected menu is called in the menu level by pressing this key.
	The control unit is switched on or off by pressing this key.



Note

Press  key to go to menu 2-1 "Customer Counter".

9.3

Operational Readiness

Switching on

- Press the key .

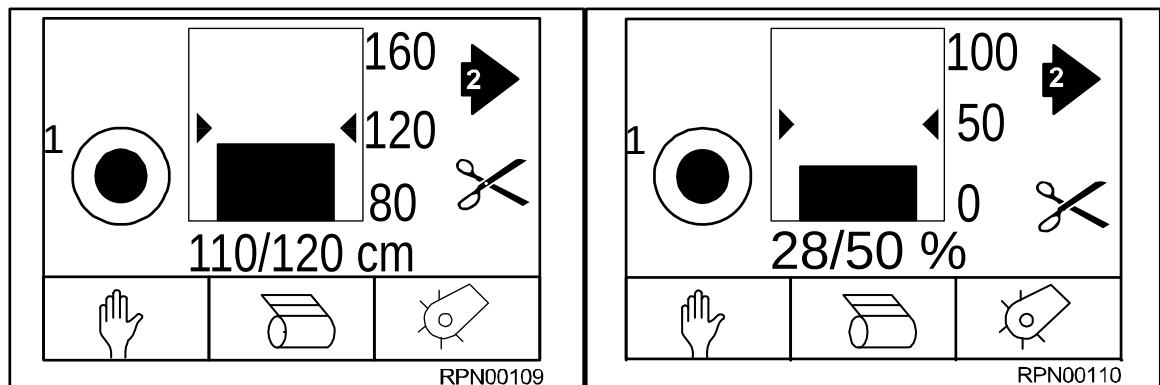


Fig. 76

Basic screen Fortima V

Basic screen Fortima F

When the connection is made, the home screen appears in the display after a short time.

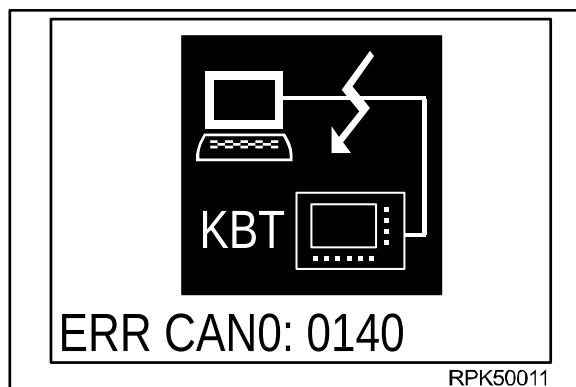


Fig. 77 Error message

If no connection is made, the above error message appears in the display.
In this case, check the cable between the control unit and the job computer.

KRONE operation terminal Beta

9.4 Basic Screen



Note

Graphics and symbols that are available depend on the equipment of the machine. The displayed graphics and symbols are not shown permanently.

9.4.1 Functions of Keys 1 - 3

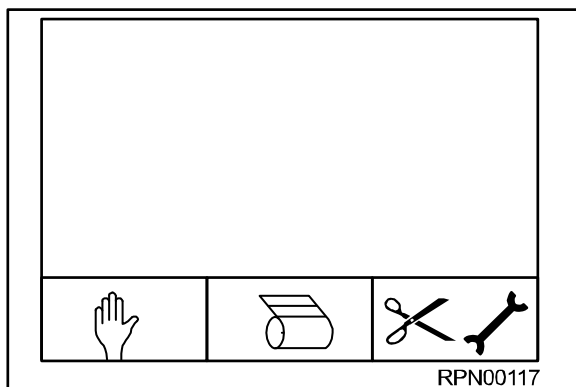
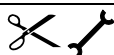


Fig. 78

Key	Symbol	Function	
		Manual mode	
		Automatic mode	
		Feeding twine	Depending on the equipment of the machine and the type of tying that is set.
		Feeding net	
		Selecting pick-up	
		Selecting blade base	

9.5 Selecting manual or automatic mode

After switching on control terminal, operating mode "Manual mode" is set by default.

Press  key to change between "Manual mode" and "Automatic mode".

The symbol above the  key indicates the set operating mode:

Symbol	Function
	Manual mode – The tying process must be triggered manually by pressing  key.
	Automatic mode – The tying process is triggered automatically when the target filling is reached. – The start of tying process can be decelerated by an adjustable amount of time, refer to chapter 1-9 "Tying Start Deceleration". – Tying process starts immediately after  key is pressed in automatic mode - independently of the set tying start deceleration.

9.5.1 Selecting Pick-up or Blade Base

The valve for pick-up is selected as standard after switching on the control terminal.

Press  key to change between pick-up valve and blade base valve.

The symbol above the  key displays the set valve:

Symbol	Function
	Pick-up The control unit can be operated to lift and lower the pick-up.
	Blade base The control unit can be operated to lift and lower the blade drawer.

KRONE operation terminal Beta

9.5.2 Displays in the Main Window

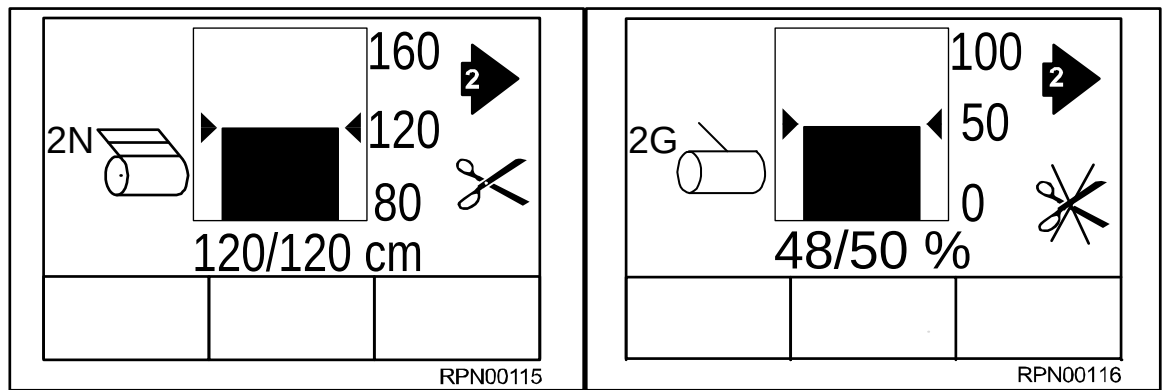
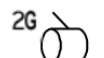
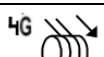
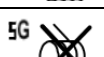
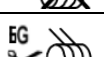
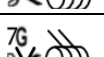
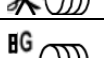


Fig. 79

KRONE operation terminal Beta

Symbol	Meaning	Information
	Correcting direction of travel to the left	Due to uneven filling, the bale is thicker on one side. The size of the arrow and the number (1-3) signalize to what extent the direction of travel must be corrected.
	Correcting direction of travel to the right	
	Setpoint value bale diameter reached (Fortima F) Setpoint value bale firmness reached (Fortima V)	flashing
	Net is fed	Net tying
	Tying has not been tied	
	Tying process is active	
	Tying process has been stopped	
	Tying has been cut off	
	Tying has not been cut off	
	Tying completed	
	Twine is fed	Twine tying
	Tying has not been tied	
	Tying process is active	
	Tying process has been stopped	
	Tying has been cut off	
	Tying has not been cut off	
	Tying completed	
	Blades are swivelled in	With Multicut
	Blades are not swivelled in	
120/120 cm	Actual value and setpoint value bale diameter in cm	Fortima V
48/50 %	Actual value and setpoint value bale firmness as percentage	Fortima F

KRONE operation terminal Beta

9.5.3 Messages

Information message

The information message will appear only, if the main operation display has been set. The message will disappear automatically, when the cause for the information message has been removed.

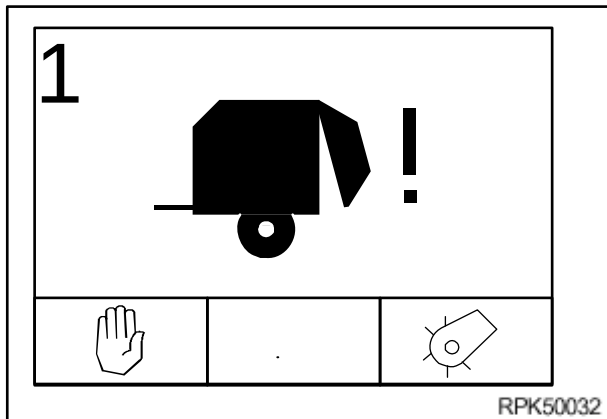


Fig. 80

Message Bale chamber not been closed

The softkeys in the lower line continue to be active whilst the information message is displayed.

9.5.4 Setting Bale Firmness

Fortima F

Pressing the  key twice brings up the basic screen.

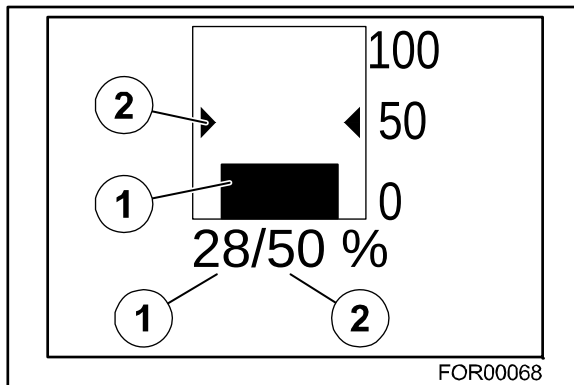


Fig. 81

The value (1) and the height of the bar (1) show the current actual bale firmness as a percentage.

The value (2) and the arrows in the bar display (2) show the set target bale firmness as a percentage.

- Press  or  key to change setpoint value.

KRONE operation terminal Beta

9.5.5 Setting Bale Diameter

Fortima V

Pressing the  key twice brings up the basic screen.

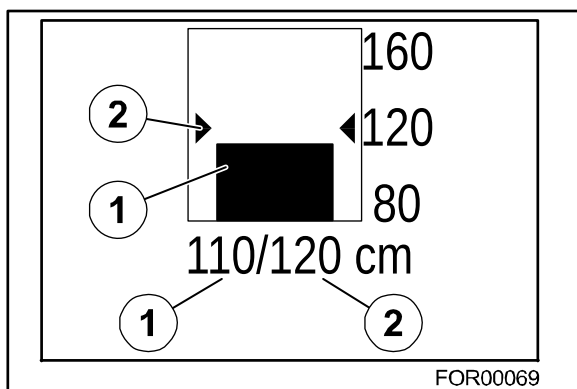


Fig. 82

The value (1) and the height of the bar (1) show the current actual bale diameter in cm.

The value (2) and the arrows in the bar display (2) show the set target bale diameter in cm.

- Press  or  key to change setpoint value.

9.6 Menu Level

9.6.1 Short overview

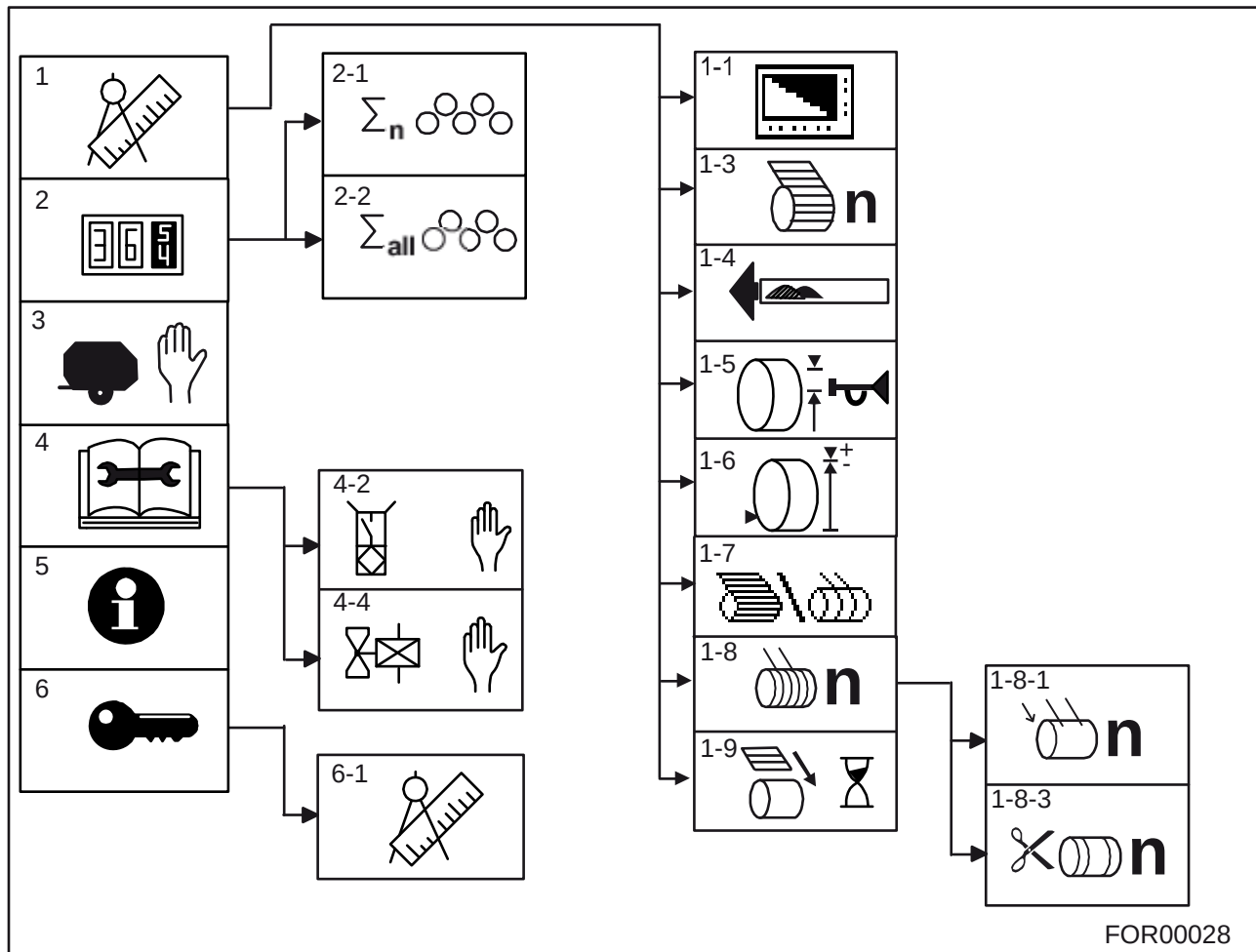


Fig. 83:

1	Settings	1-8	Number of Twine Wraps	3	Manual Operation
1-1	Contrast	1-8-1	Inserting Twine Wraps	4	Service
1-3	Number of Net Tying	1-8-3	Cutting Off Twine Wraps	4-2	Manual Sensor Test
1-4	Sensitivity of Direction Display	1-9	Tying Start Delay	4-4	Manual Actuator Test
1-5	Pre-signalling	2	Counter	5	Information
1-6	Correction Filling	2-1	Customer Counter	6	Technician
1-7	Selection Type of Tying	2-2	Total Counter	6-1	Settings

KRONE operation terminal Beta

9.6.2 Bringing up a Menu Level

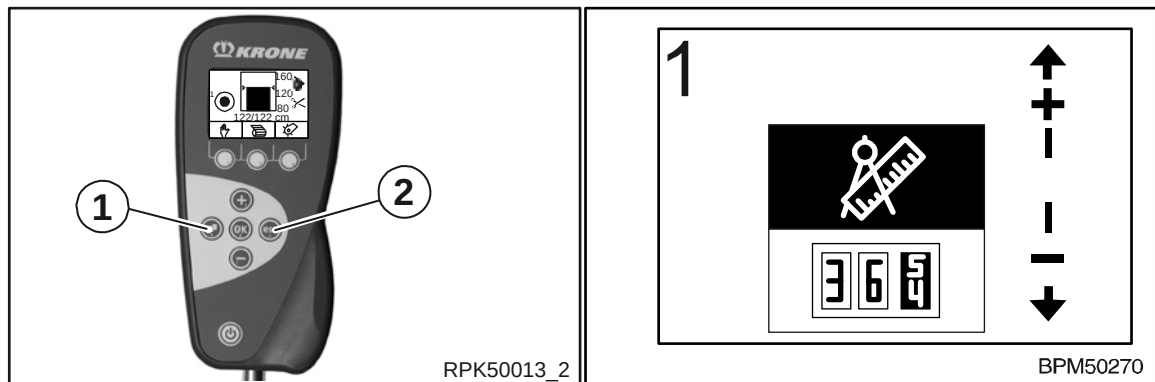


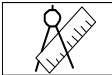
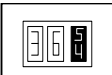
Fig. 84

Press the key  (1).

The menu level is shown in the display.

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

The menu level is divided into six main menus:

-  = main menu 1 "Settings"
-  = main menu 2 "Counters"
-  = main menu 3 "Manual operation"
-  = main menu 4 "Service"
-  = main menu 5 "Info"
-  = main menu 6 "Fitter"

- You can use the keys  and  to select the main menus. The selected icon is shown in reverse colours.
- Pressing the key  brings up the menu level of the main menu that is selected.
- Use the key  to close the menu currently displayed.

9.7

Main menu 1 "Settings"

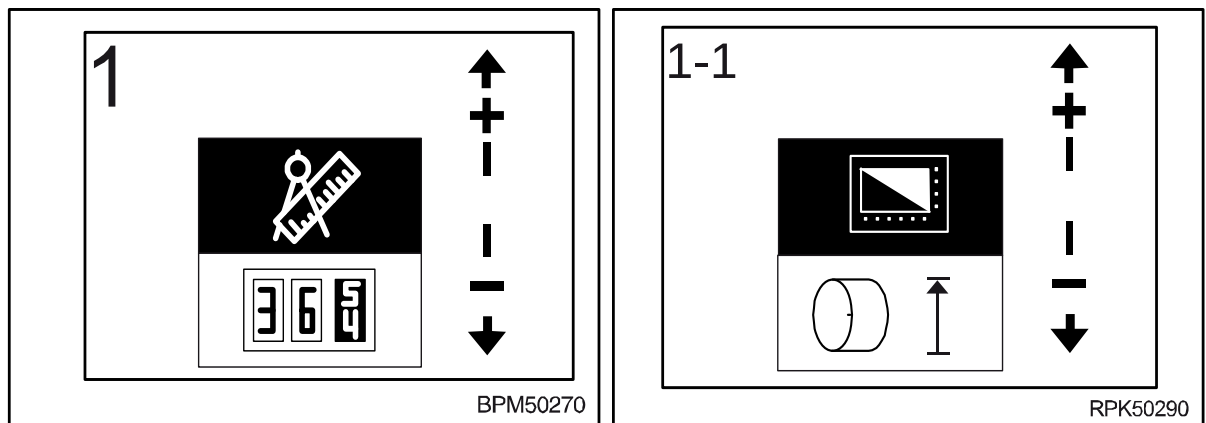
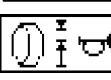


Fig. 85

- Use  to call the menu level.
- Use the keys  or  to select main menu 1 . The icon is shown inversed.
- Press key .

The display shows menu level 1 "Settings". Menu level 1 "Settings" is divided into 8 menus, depending on how the machine is equipped:

	=Menu 1-1 "Contrast"
	= Menu 1-3 "Number of net winds"
	= Menu 1-4 "Sensitivity of direction display"
	= Menu 1-5 "Pre-signalling"
	= Menu 1-6 "Filling correction"
	= Menu 1-7 "Select type of tying"
	= Menu 1-8 "Number of twine wraps"
	= Menu 1-9 "Tying start delay"

KRONE operation terminal Beta

9.7.1 Menu 1-1 "Contrast"

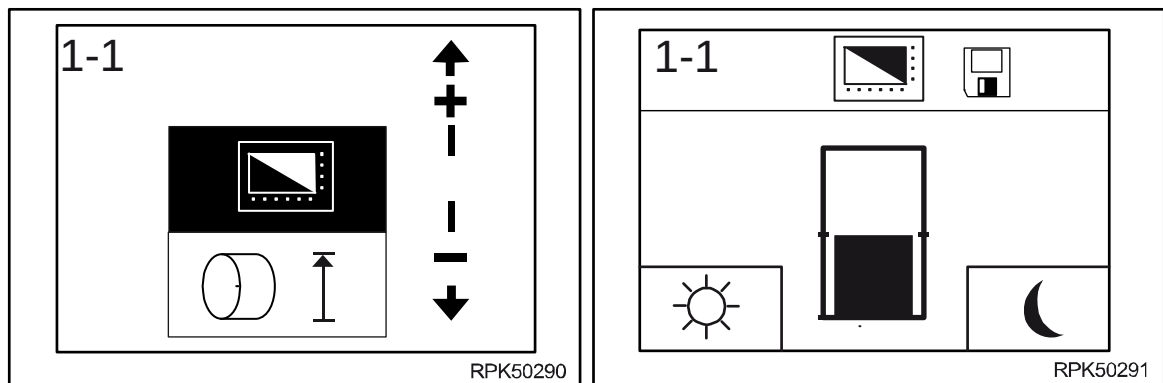


Fig. 86

In this menu, the brightness of the display can be adapted to lighting conditions.

Calling the menu

Main menu 1 "Settings" is displayed.

- Select menu 1-1  with the  or  key, the symbol is shown in reverse colours.
- Press  key.

The display shows menu 1-1 "Contrast".

The bar display indicates the set contrast value. The symbol  in the upper line indicates that the displayed value is saved.

Setting and saving the contrast

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

- Set the contrast by using the  or  key, the symbol  in the upper line disappears.
- Press  key, the set contrast value is saved, the symbol  appears in the upper line.



Note

In the "Contrast" menu, the brightness of the display can be adapted to lighting conditions. In case of strong sunlight, it is recommended to set a high contrast value.

- The  button closes the open menu.

Pressing the  button and holding it down brings up the home screen.

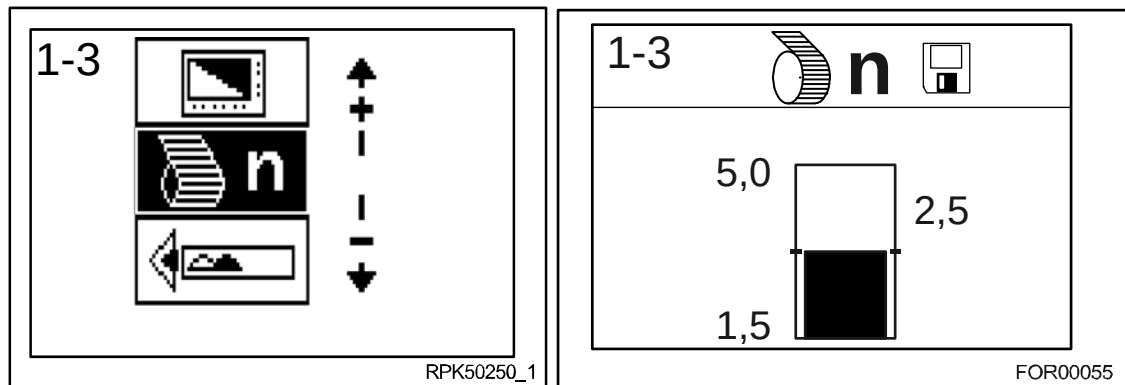
9.7.2
Menu 1-3 "Number of Net Winds"


Fig. 87

Displaying the menu

Main menu 1 "Settings" appears:

- You can select menu 1-3  with the  or  keys. The icon is shown in reverse colours.
- Press the  key.

The display shows menu 1-3 "Number of Net Winds".

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

Setting the Number of Net Winds

The number of net winds is indicated in revolutions.

- You can use the  or  key to adjust the desired number of net winds. The  icon in the top line goes out.
- Press the  key. The number of net winds set is saved and the  icon appears in the upper line.


Note

The higher the number of wrappings, the more stable the bale is wrapped. The value must be adapted to the conditions on the field.

For silage, approx. two wrappings are recommended. For straw, approx. three wrappings are recommended.

- The  button closes the open menu.

Pressing the  button and holding it down brings up the home screen.

KRONE operation terminal Beta

9.7.3 Menu 1-4 „Sensitivity of Direction Display“

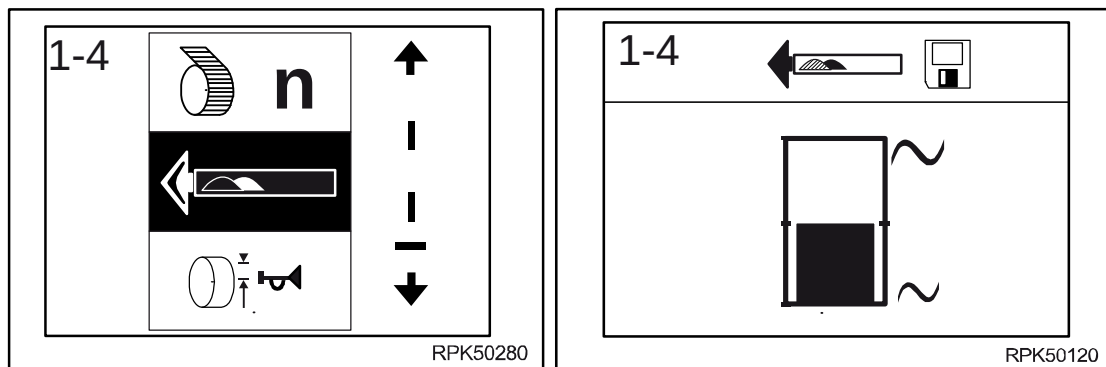


Fig. 88

Calling the menu

Main menu 1 “Settings” is called.

- Select menu 1-4  by using  or  keys, the symbol is shown in reverse colours.
- Press the  key.

The display shows menu 1-4 “Sensitivity of direction display”.

The bar display shows the set sensitivity. The higher the bar, the greater the sensitivity of the direction display. The symbol  in the upper line indicates that the displayed value is saved.

Setting and saving the sensitivity of the direction display

- Set the sensitivity by using  or  keys, the symbol  in the upper line will disappear.
- Press  key, the set sensitivity is saved, the symbol  appears in the upper line.
- The  button closes the open menu.

Pressing the  button and holding it down brings up the home screen.



KRONE operation terminal Beta



Note

An even filling of the bale chamber ensures optimally shaped bales and additionally protects the floor conveyor chains of the machine. Therefore it is recommended to set the sensitivity of direction display.

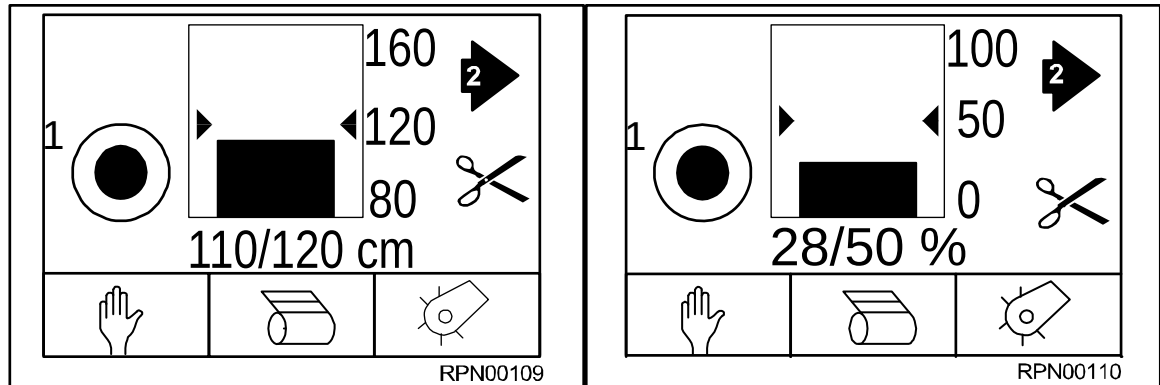


Fig. 89

Basic screen Fortima V

Basic screen Fortima F

Direction of Travel Indicator



Arrows left/right top in the display.

The arrows (1) have three different sizes, numbered with 1-3. They show the driver to which side he must correct the direction and how far when driving over a swath, to ensure the bale chamber is filled evenly.



Note

When achieving a constant filling, all signals disappear

KRONE operation terminal Beta

9.7.4 Menu 1-5 "Pre-Signalling"

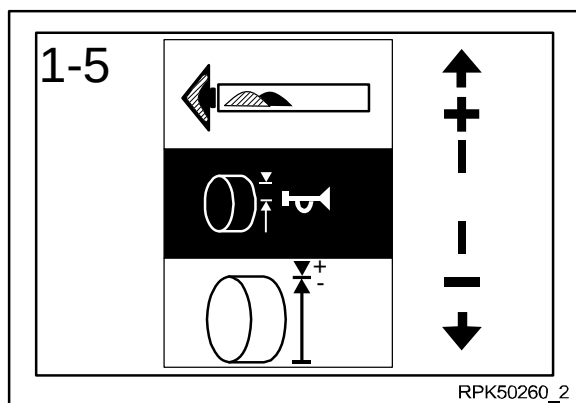


Fig. 90



Note

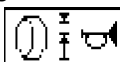
Pre-signalling indicates how far in advance it is signaled that the setpoint value

- of bale diameter (Fortima V) or
- of bale firmness (Fortima F)

will be reached shortly.

Calling the menu

Main menu 1 "Settings" is called.

- Select menu 1-5  by using  or  key, the symbol is shown in reverse colours.
- Press  key.

The display shows menu 1-5 "Pre-Signalling".

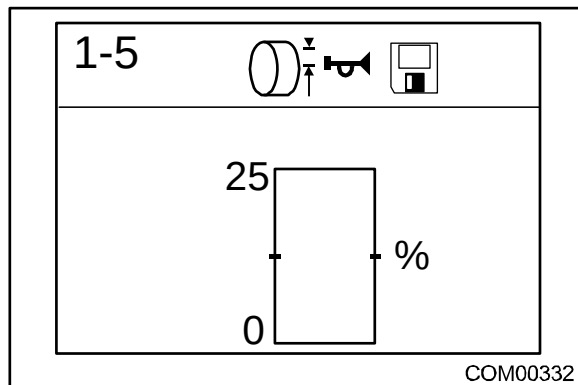
The symbol  in the upper line indicates that the displayed value is saved.



Setting pre-signalling:

Fortima F

The value is displayed as percentage.



Fortima V

The value is displayed in cm.

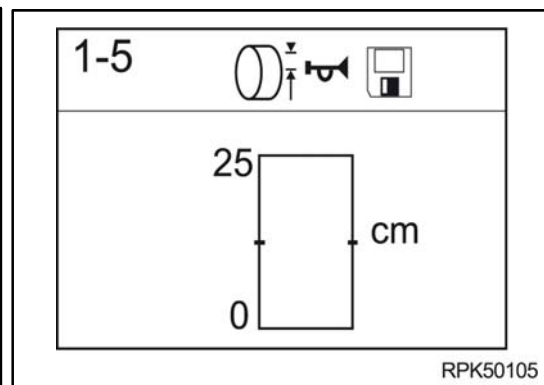


Fig. 91

- Use or key to set the desired deceleration, the symbol in the upper line goes out.
- Press key, the set deceleration is saved, the symbol appears in the upper line.

Example

Set target value of bale diameter: 1.50 m

Set value of pre-signalling: 25 cm

The audio signal sound can be heard if the actual value of the bale diameter is 1.25 m.

- The button closes the open menu.

Pressing the button and holding it down brings up the home screen.

KRONE operation terminal Beta

9.7.5 Menu 1-6 "Correction Filling"

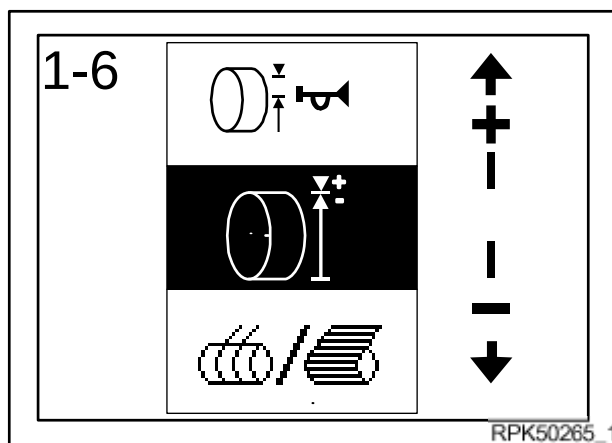


Fig. 92

If bale diameter or bale firmness is not reached or is too high, bale diameter or bale firmness can be corrected in a predefined range via menu 1-6 "Correction Filling".

Calling the menu

Main menu 1 "Settings" is displayed.

- Select menu 1-6  by using  or  key, the symbol is shown in reverse colours.
- Press  key.

The display shows menu 1-6 "Correction Filling".

The symbol  in the upper line indicates that the displayed value is saved.



KRONE operation terminal Beta

Correcting the filling

Fortima F

Bale firmness: -10 % to +10 %

Fortima V

Bale diameter: -10 cm to +10 cm

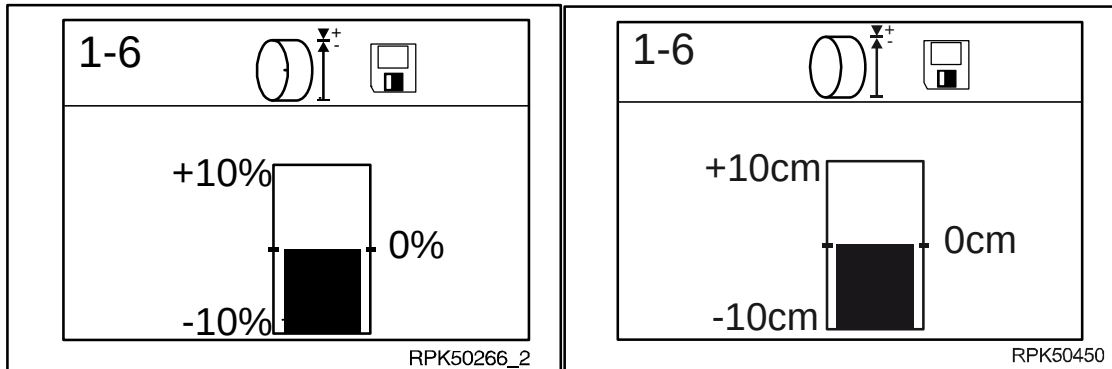


Fig. 93

- Increase or reduce the desired value by using  or  key, the symbol  in the upper line disappears.
- Press  key, the set position is saved, the symbol  appears in the upper line.
- The  button closes the open menu.

Pressing the  button and holding it down brings up the home screen.

KRONE operation terminal Beta

9.7.6 Menu 1-7 "Select type of tying"

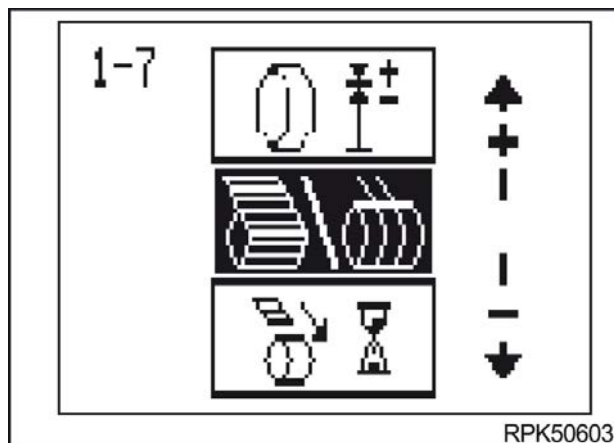


Fig. 94

Displaying the menu

Main menu 1 "Settings" appears:

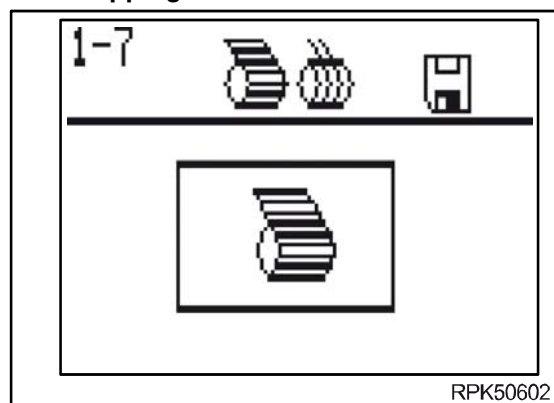
- You can select menu 1-7  with the  or  keys. The icon is shown in reverse colours.
- Press the  key.

The display shows menu 1-7 "Type of tying".

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

Setting the type of tying

Net Wrapping



Twine tying

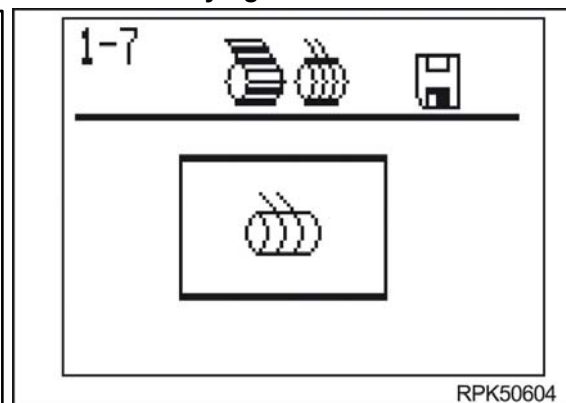


Fig. 95

- You can use the  or  key to adjust the type of tying. The  icon in the top line goes out.
- Press the  key. The set type of tying is saved and the  icon appears in the upper line.
- The  button closes the open menu.

Pressing the  button and holding it down brings up the home screen.

9.7.7

Menu 1-8 "Number of Twine Wraps"

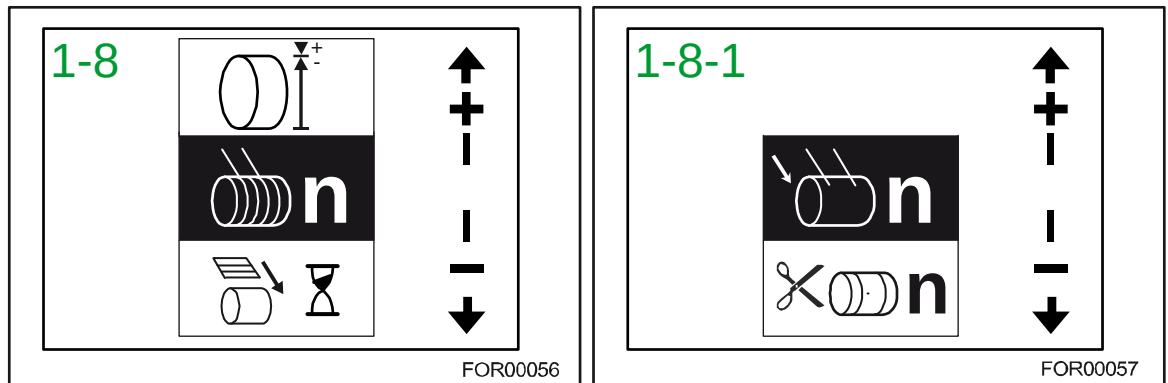


Fig. 96

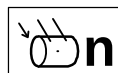
The number of twine wraps can be entered via menu 1-8 "Number of Twine Wraps".

Calling the menu

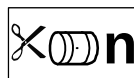
Main menu 1 "Settings" is displayed.

- Select menu 1-8  with the  or  keys, the symbol is shown in reverse colours.
- Press  key.

The display shows menu 1-8 "Number of Twine Wraps". The menu is divided into the following menus:



Menu 1-8-1 "Inserting Twine Wraps"



Menu 1-8-3 "Cutting off Twine Wraps"

KRONE operation terminal Beta

9.7.8 Menu 1-8-1 „Inserting Twine Wraps“

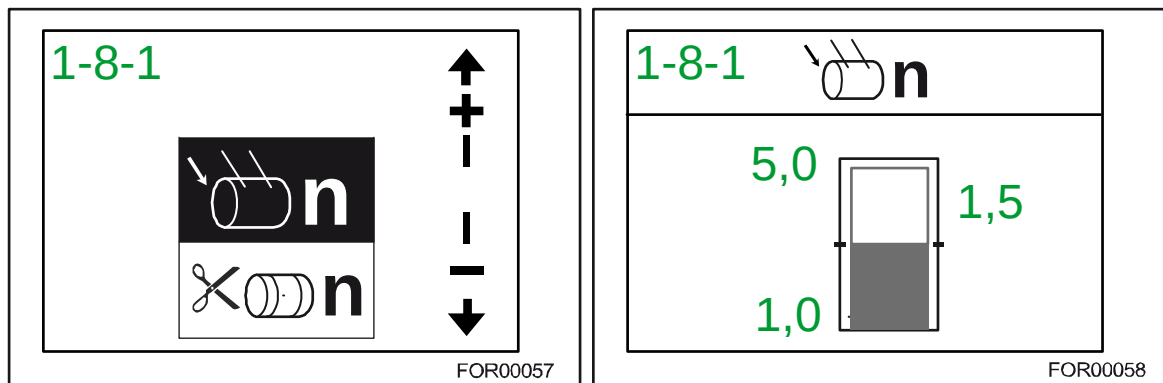


Fig. 97

Calling the Menu

Main menu 8-1 “Number of Twine Wraps” is active.

- Select menu 1-8-1  by using the  or  key, the symbol is shown in reverse colours.
- Press  key.

The display shows menu 1-8-1 “Inserting Twine Wraps”.

Setting

- Set the standstill of the twine slide after inserting the twine in twine wraps by using the  or  key. The setting can be made between 1.0 and 5.0 twine wraps.
- Press  key, the set value is saved, the symbol  appears in the upper line.
- The  button closes the open menu.

Pressing the  button and holding it down brings up the home screen.



9.7.9 Menu 1-8-3 „Cutting Off Twine Wraps "

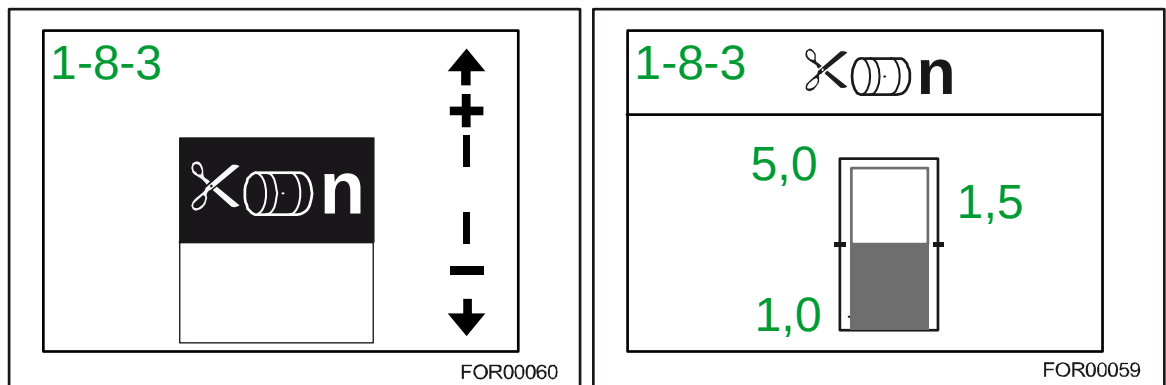


Fig. 98

Calling the Menu

Main menu 8-1 "Number of Twine Wraps" is active.

- Select menu 1-8-3  with the  or  key, the symbol is shown in reverse colours.
- Press  key.

The display shows menu 1-8-3 "Cutting Off Twine Wraps".

Setting

- Set the standstill of the twine slide before cutting off the twine in twine wraps by using the  or  key. The setting can be made between 1.0 and 5.0 twine wraps.
- Press  key, the set value is saved, the symbol  appears in the upper line.
- The  button closes the open menu.

Pressing the  button and holding it down brings up the home screen.

KRONE operation terminal Beta

9.7.10 Menu 1-9 "Tying Start Delay"

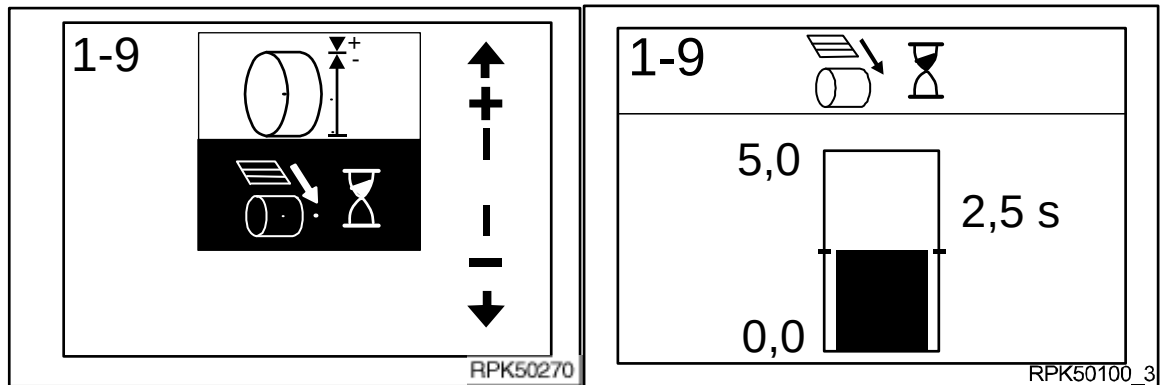


Fig. 99

Calling the menu

Main menu 1 "Settings" is displayed.

- Select menu 1-9  with the  or  keys, the symbol is shown in reverse colours.
- Press  key.

The display shows menu 1-9 "Tying Start Delay".

The symbol  in the upper line indicates that the displayed value is saved.

Setting the tying start delay

The time delay is displayed in seconds.



Note

Tying start delay indicates how much time there is between

- "Setpoint value of bale diameter reached" (Fortima V) or
 - "Setpoint value of bale firmness reached" (Fortima F)
- and "Triggering tying process" (in automatic mode).

Due to this function, the driver gets sufficient time to move tractor and machine to a complete standstill before tying process starts automatically.

- Set the desired time delay by using  or  key, the symbol  in the upper line disappears.
- Press the  key, the set time delay is saved, the symbol  appears in the upper line.
- The  button closes the open menu.

Pressing the  button and holding it down brings up the home screen.

9.8

Main menu 2 "Counters"

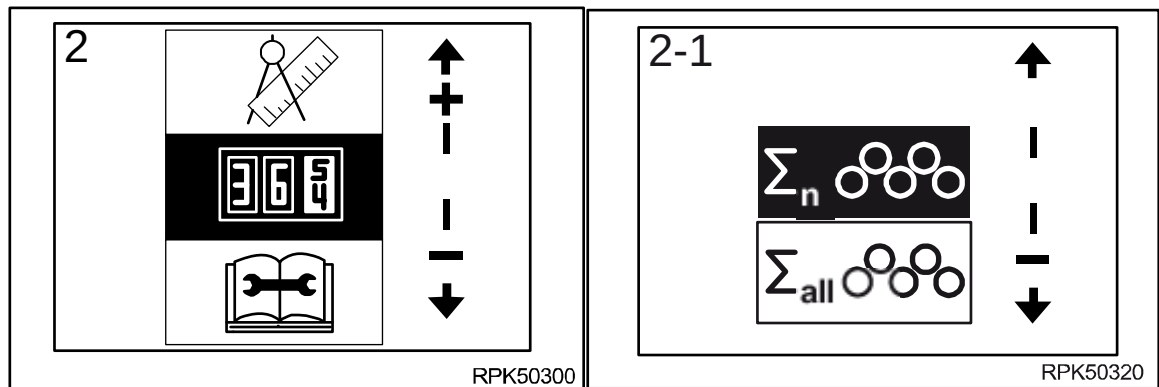


Fig. 100

Calling the main menu

- Call the main menu with the  key.
- You can select main menu 2  with the  or  keys. The icon is shown in reverse colours.
- Press the  key.

The display shows menu level 2 "Counters".

Menu level 2 "Counters" is divided into two menus:

 = Menu 2-1 "Customer counters"

 = Menu 2-2 "Total counters"

KRONE operation terminal Beta

9.8.1 Menu 2-1 "Customer counters"

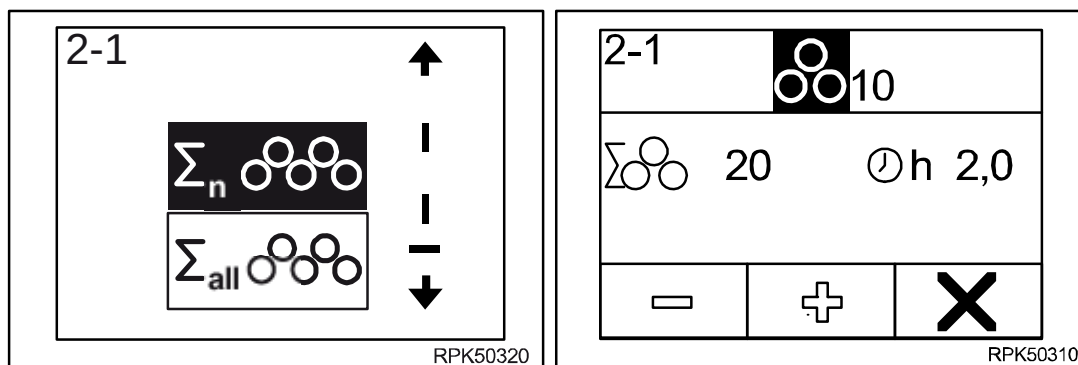


Fig. 101

Calling the menu

Main menu 2 "Counters" is called.

- Select menu 2-1  with the  or  key, the symbol is shown in reverse colours.
- Press  key.

The display shows menu 2-1 "Customer Counter".

Meaning of the symbols:



10 = Active customer counter (1 - 20)



= Total number of bales



= Operating hours counter

(counts only when the control unit is switched on and the PTO shaft is running)

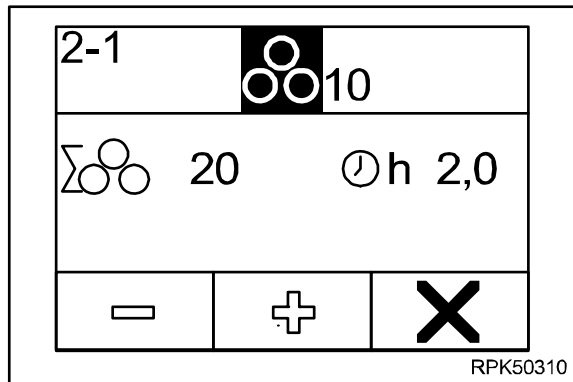


Fig. 102

Activating customer counter

- You can use the  or  keys to bring up the desired customer counter. It appears in the top line.
- Press the  key.

The desired customer counter  (in this case customer counter 10) is shown in reverse colours.

Changing the number of bales

- Press the  key for softkey  to reduce the number of bales.
- Press the  key for softkey  to increase the number of bales.

Deleting the customer counter

- You can use the  or  keys to bring up the desired customer counter. It appears in the top line.
- Press the  key for softkey .

The selected customer counter is set to zero.

- The  button closes the open menu.

Pressing the  button and holding it down brings up the home screen.

KRONE operation terminal Beta

9.8.2 Menu 2-2 "Total bale counter"

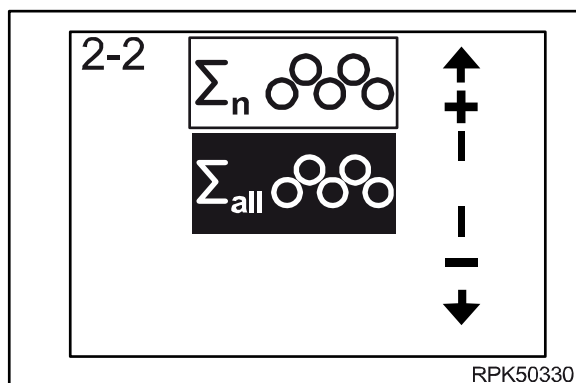


Fig. 103

Displaying the menu

Main menu 2 "Counters" is displayed.

- You can select menu 2-2  with the  or  keys. The icon is shown in reverse colours.
- Press the  key.

The display shows menu 2-2 "Total bale counter". The total number of bales is the sum of all bales pressed. They are not assigned to any customer counter.

Meaning of the icons:



Bale counters (cannot be deleted)



Operating hours counter (cannot be deleted)



Season counter 1 (can be deleted)

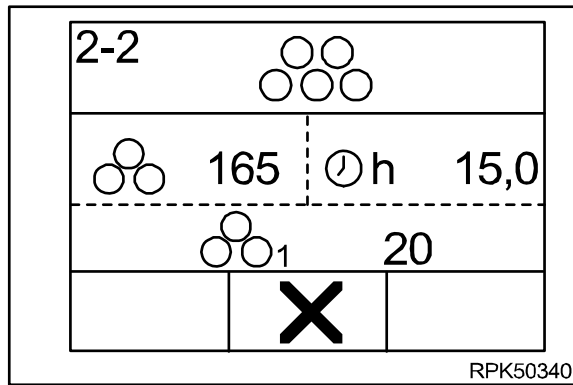


Fig. 104

Delete season counter 1

- Press the  key for softkey . Season counter 1 is set to zero.

- The  button closes the open menu.

Pressing the  button and holding it down brings up the home screen.

KRONE operation terminal Beta

9.9 Main menu 3 „Manual operation“



Note

The "Manual operation" menu can be used to manually retract and extend the motor for adjustment, maintenance or repair work.

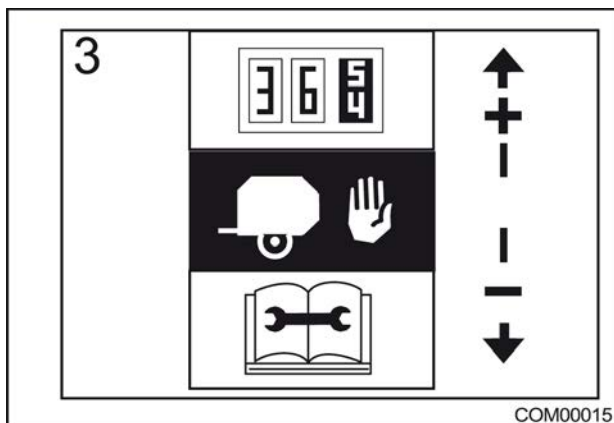


Fig. 105

- Call the menu level with the key .
- You can select main menu 3  with the keys  or . The icon is shown in reverse colours.
- Press the key .

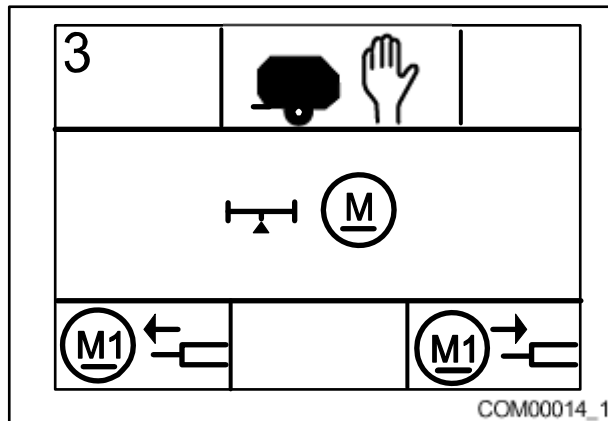


Fig. 106

- The display shows menu level 3  "Manual operation".
The following current states of the machine are shown in the display (depending on how the machine is equipped):

  Motor in centre position

 Positions not defined

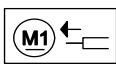


WARNING! – Crush hazard due to moving motor!

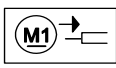
Personal injury.

- To prevent injury, do not stand in the area of the extending or retracting motor.

Move out motor

Press the key ; the icon  appears in reverse colours; the motor moves out.

Move in motor

Press the key ; the icon  appears in reverse colours; the motor moves in.

- The  button closes the open menu.

Pressing the  button and holding it down brings up the home screen.

KRONE operation terminal Beta

9.10 Main menu 4 "Service"

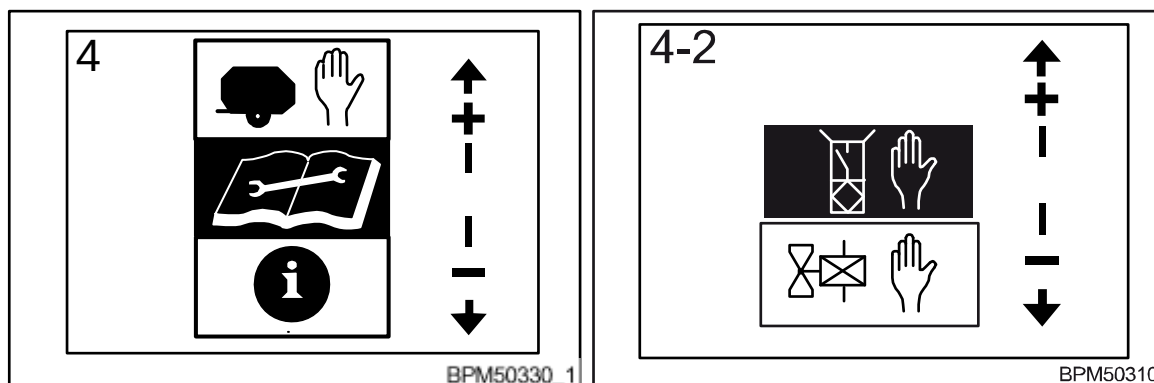


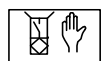
Fig. 107

Calling the main menu

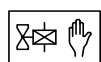
- Call the main menu with the  key.
- You can select main menu 4  with the  or  keys. The icon is shown in reverse colours.
- Press the  key.

The display shows menu level 4 "Service".

Menu level 4 "Service" is divided into three menus:



= Menu 4-2 "Manual Sensor Test"



= Menu 4-4 "Manual Actuator Test"

9.10.1 Menu 4-2 "Manual Sensor Test"

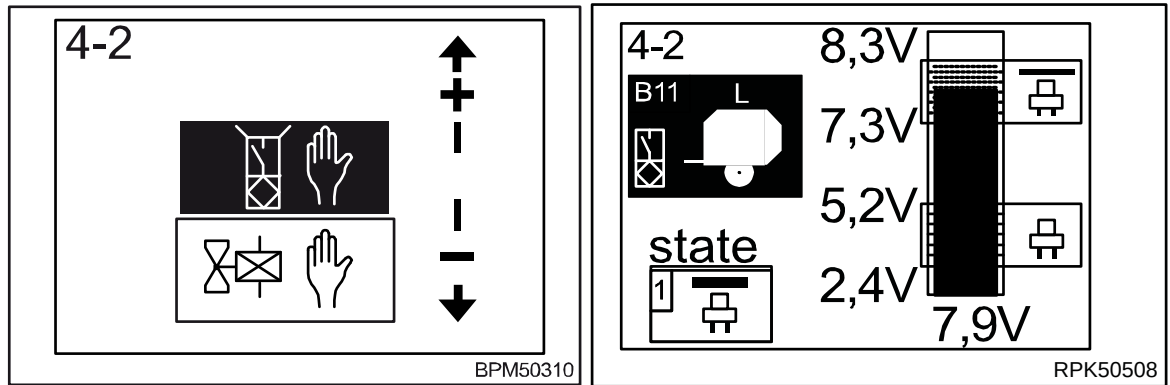


Fig. 108

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

**Caution!**

Make sure that the PTO shaft does not turn during the sensor test.

Calling the menu

Main menu 4 "Service" is called.

- Select menu 4-2  with  or  keys, the symbol is shown in reverse colours.
- Press  key.

The display shows menu 4-2 "Manual Sensor Test".

Selecting the sensor

- Select the sensor with  or  keys.

The selected sensor is displayed inversely and is tested.

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.

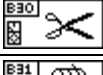
The distance from the sensor to the metal must be adjusted so that in the alive state the bar is in the upper mark. Next check whether the bar is in non-alive state in the lower marked area.

To adjust the sensors, refer to chapter Maintenance "Setting the Sensors".

KRONE operation terminal Beta

Diagnostics – Namur sensors

Possible sensors (depending on how the machine is equipped)

No.	Sensor symbol	Description
B11		Bale chamber closed left
B12		Bale chamber closed right (Fortima V)
B30		Blade monitoring
B31		Engine tying centre
B32		Tying runs
B33		Twine stop

State:

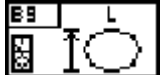
- | | | | |
|---|--------------|---|---------------------|
| 1  | Alive (iron) | 2  | Not alive (no iron) |
| 3  | Broken cable | 4  | Short circuit |

For information on the position of the sensors, please refer to chapter Maintenance “Position of Sensors”.

Diagnostics – analogue sensors

Setting values:

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

No.	Sensor symbol	Description
B9		Bale diameter left (Fortima V) Bale firmness left (Fortima F)
B10		Bale diameter right (Fortima V) Bale firmness right (Fortima F)

State:

- ⑦  Broken cable or short circuit
- ⑧ **Error** Defect in the sensor or job computer

For information on the position of the sensors, please refer to chapter Maintenance “Position of Sensors”.

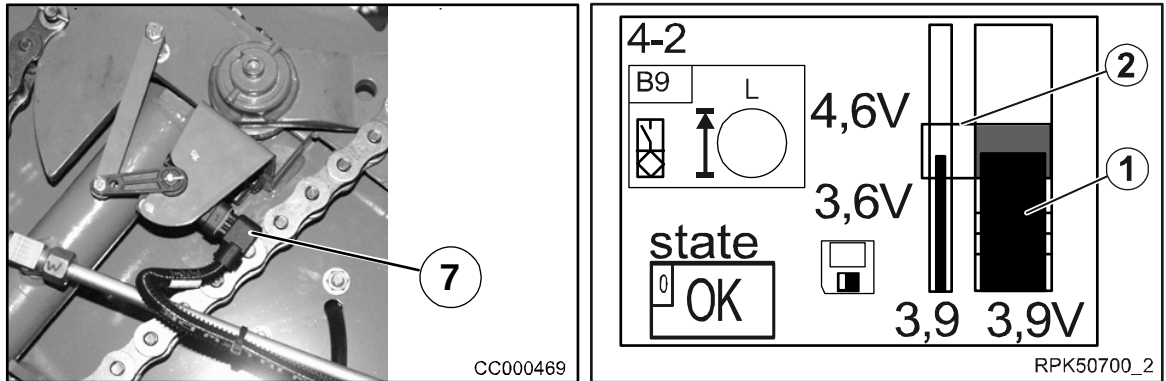
Fortima V
Setting sensor B9/B10 Bale diameter


Fig. 109


Caution!

The bale chamber must be closed and empty.

If the bar (1) is not inside the rectangle (2) when the bale chamber is closed and emptied, the corresponding sensor (7) must be adjusted mechanically.

To do this:

- Loosen the sensor (7) and turn it in the oblong hole until the bar (1) is positioned inside the rectangle (2) of the bar display.


Note

When the bar (1) is inside the rectangle (2), an audio signal will sound.

- Tighten the sensor (7).


Note

Saving is only possible if the bar (1) is inside the rectangle (2) of the bar display.

Saving value:

- Press function key **OK**

The symbol  in the upper line indicates that the displayed value is saved.

KRONE operation terminal Beta

Fortima F

Setting sensor B9/B10 bale firmness

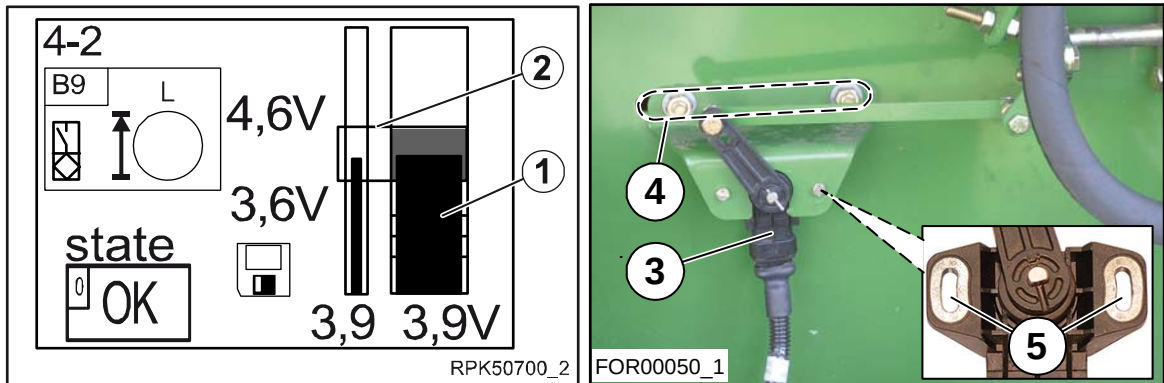


Fig. 110



Caution!

The bale chamber must be open and empty.

The respective sensor (3) must be set mechanically if the bar (1) is not inside the rectangle (2) when the bale chamber is open and empty.

To do this:

- Loosen the sensor and move it in the oblong hole (4) until the bar (1) in the display is inside the rectangle (2).
- If necessary, move sensor additionally in the oblong holes (5).



Note

An audio signal will be heard if the bar (1) in the display is inside the rectangle (2).

- Tighten the screw connections of sensor (3).



Note

Setting is only possible if the bar (1) in the display is inside the rectangle (2).

Saving value:

- Press function key **OK**

The symbol  in the upper line indicates that the displayed value is saved.

Diagnostics – power supply voltages

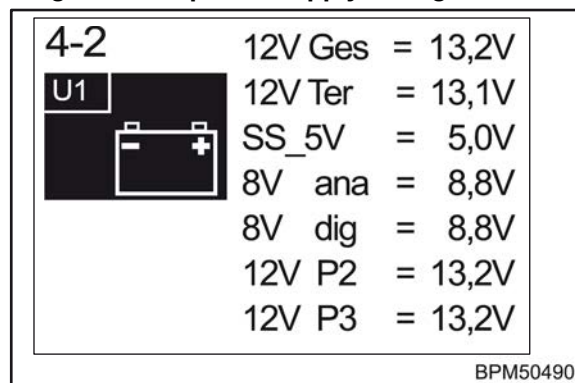


Fig. 111

Calling the menu

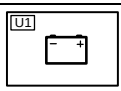
Main menu 4 "Service" is called.

- Select menu 4-2  with  or  keys, the symbol is shown in reverse colours.
- Press  key.

The display shows menu 4-2 "Manual Sensor Test".

Selecting the sensor

- Select sensor with  or  keys.
- The selected sensor is displayed inversely and is tested.

No.	Sensor icon	Description
U1		Supply voltage

Nominal voltages:

- 12 V tot.: 12 - 14.5 V
 - 12 V term: 12 - 14.5 V
 - SS_5V: 4.5 - 5.5 V
 - 8 V ana: 8.5 - 9.1 V
 - 8 V dig: 8.5 - 9.1 V
 - 12 V Pow2: 12 - 14.5 V
 - 12 V Pow3: 12 - 14.5 V
 - You can use the  key to close the menu that is currently displayed.
- The display shows menu level 4 "Service".
- Pressing the  key and holding it down brings up the basic screen.

KRONE operation terminal Beta



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.

9.10.2

Menu 4-4 "Manual Actuator Test"

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 PTO must not be turning during the actuator test. The tractor hydraulics must be deactivated.

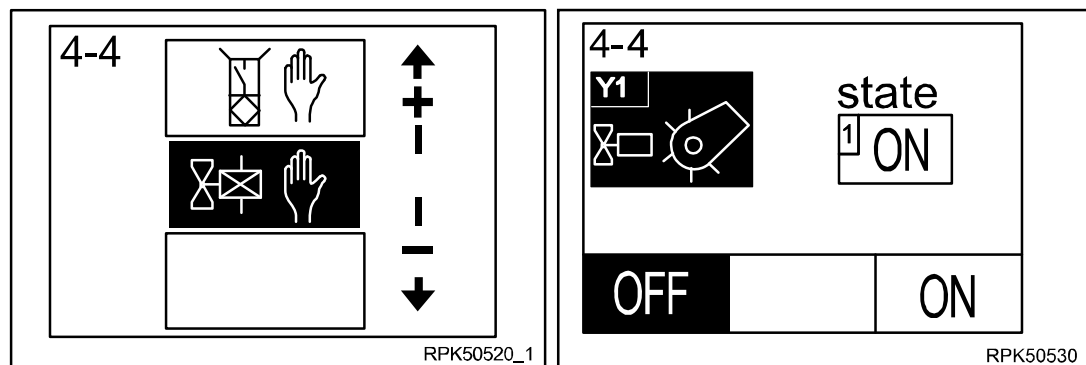


Fig. 112

Displaying the menu

Main menu 4 "Service" is called.

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

The display shows menu 4-4 "Manual actuator test".

Selecting the actuator

- Select the actuator with the  or  keys.
- The selected actuator is displayed in reverse colours.

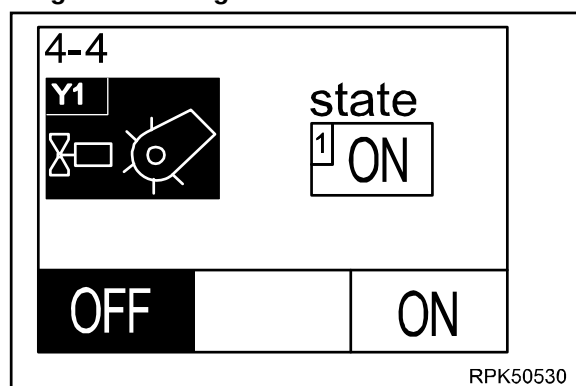
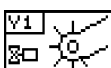
Diagnostics – digital actuators


Fig. 113

Errors are only displayed if the actuator is turned on and a test is possible for the actuator (see the table called "Possible digital actuators"). If necessary, the LED on the plug right on the actuator can be used for monitoring.

- Press the  key for softkey **ON**.
- Press the  key for softkey **OFF**.

Possible digital actuators (depending on how the machine is equipped)

No.	Actuator symbol	Description
Y1		Valve pick-up
Y3		Valve blade
Q1		Coupling (twine tying)

State:

- ① **ON** Actuator on
- ② **OFF** Actuator off
- ③  General actuator error
- ④  No power supply; fuse is probably defective

KRONE operation terminal Beta

Possible motors (depending on how the machine is equipped)

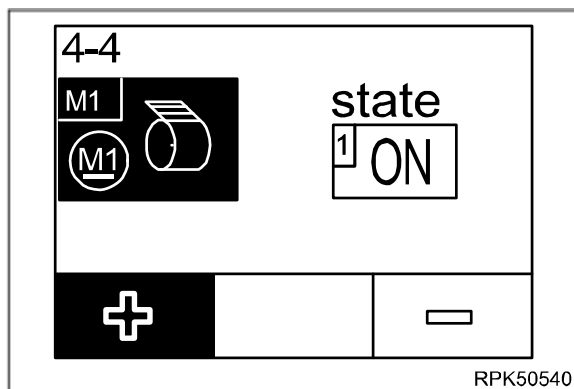


Fig. 114

- Press  key for  (extending engine). The function is only momentary-action.
- Press  key for  (retracting engine). The function is only momentary-action.

No.	Actuator symbol	Description
M1		Setting motor net tying / twine tying

State:

- ① ON Actuator on
- ② OFF Actuator off
- ③  General actuator error

- The  button closes the open menu.

Pressing the  button and holding it down brings up the home screen.

9.11

Main menu 5 "Info"

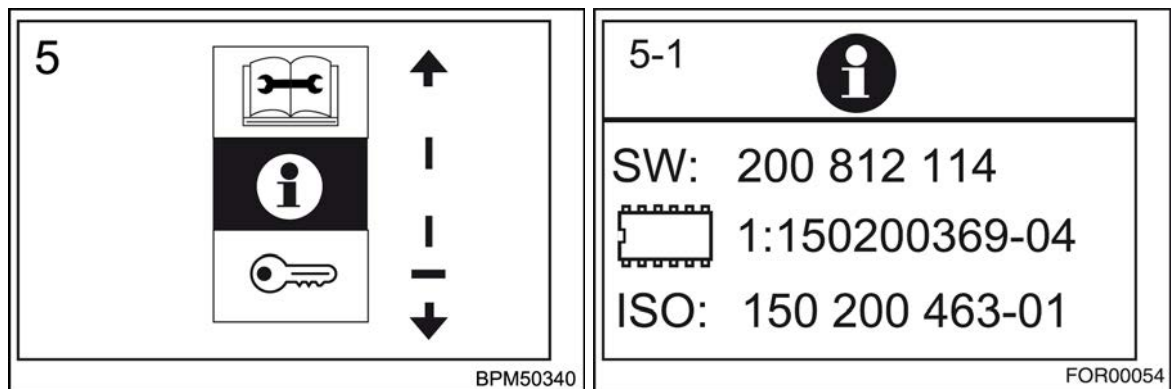


Fig. 115

Calling the main menu

- Use  key to call the menu level.
- Use the keys  or  to select main menu 5 . The icon is shown inverted.
- Press key .

The display shows menu 5 "Info".

- SW = Complete software version of the machine
-  = Version of the job computer
- ISO = ISO software version of the job computer
- Use key  to close the currently displayed menu.

The display shows main menu 5 "Info".

- Press key  to call the basic screen.

KRONE operation terminal Beta

9.12 Main Menu 6 „Technician“

Calling the main menu

- Call the main menu with the  key.
- You can select main menu 6  with the  or  keys. The icon is shown in reverse colours.
- Press the  key.

Main menu 6 "Technician" is password-protected.

The display shows the password query.



9.13 Alarm messages

Audio signals



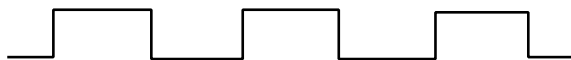
Continuous tone



Short interval



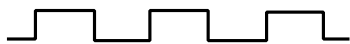
Medium interval



Long interval



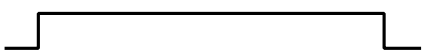
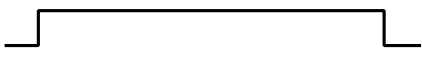
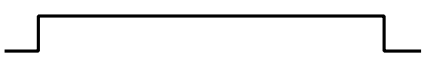
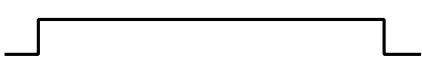
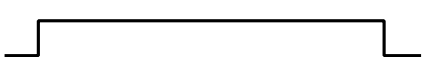
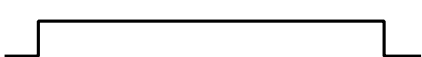
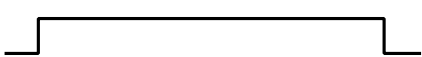
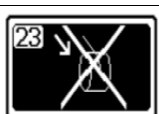
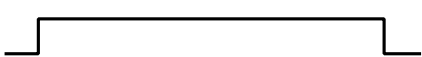
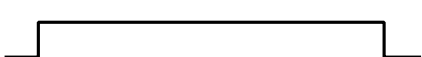
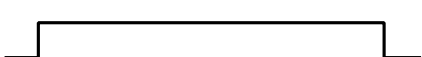
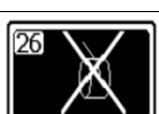
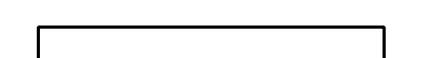
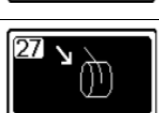
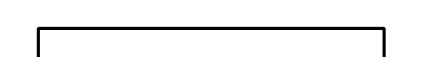
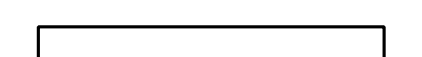
Wrapping is triggered



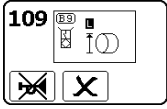
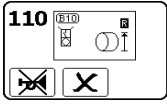
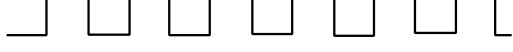
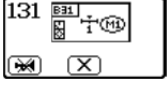
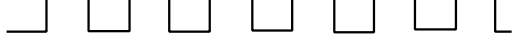
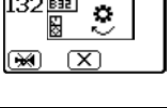
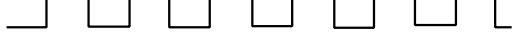
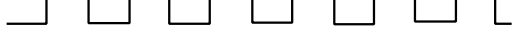
Filling reached, pre-signal reached,
wrapping complete, bale chamber
closed

KRONE operation terminal Beta

9.13.1 Note and messages

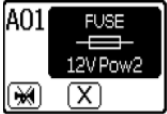
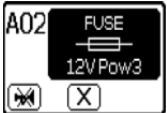
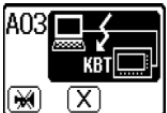
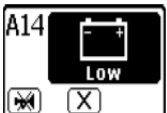
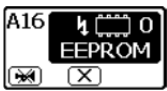
No.	Screen	Acoustic signal	Description
2			Maximum filling has been reached
5			Net has not been tied
6			Net stopped
7			Net is running
9			The net was not separated
10			Bale chamber not closed
14			Blade down
23			Twine has not been tied
24			Filling problem – left too small
25			Filling problem – right too small
26			Twine is not tied
27			Twine is running
29			Twine is not cut.


9.13.2 Physical messages

No.	Figure	Acoustic signal	Description
109			Sensor for "bale diameter left" defective (Fortima V) Sensor for "bale firmness left" defective (Fortima F)
110			Sensor for "bale diameter right" defective (Fortima V) Sensor for "bale firmness right" defective (Fortima F)
111			Sensor for "bale chamber closed" left defective
112			Sensor for "bale chamber closed" right defective (Fortima V)
130			Sensor for "blade monitoring" defective
131			Sensor for "Engine tying (centre)" defective
132			Sensor for "Tying process active" defective
133			Sensor for "Twine stop" defective

KRONE operation terminal Beta

9.13.3 General Messages

No.	Figure	Possible cause	Description
A01		– Fuse in 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.
A03		CAN ERROR – The CAN connection between the control unit and the machine was interrupted. – Loose contact in the connection to the control unit.	– Check the CAN connection to the control unit.
A04		EEPROM error – Job computer defective.	– Replace job computer.
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 tractor battery.	– Connect the KRONE connecting cable directly to the tractor battery. – Check the battery voltage. – Check the tractor dynamo.
A15		Overvoltage – Tractor dynamo is defective.	– Check the tractor dynamo.
A16		Access to protected memory slot 0. – Defect in job computer.	– Restart job computer (disconnect power supply from tractor to machine). – Replace job computer.
A17		Access to protected memory slots 0-6. – Defect in job computer.	– Restart job computer (disconnect power supply from tractor to machine). – Replace job computer.

10

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.

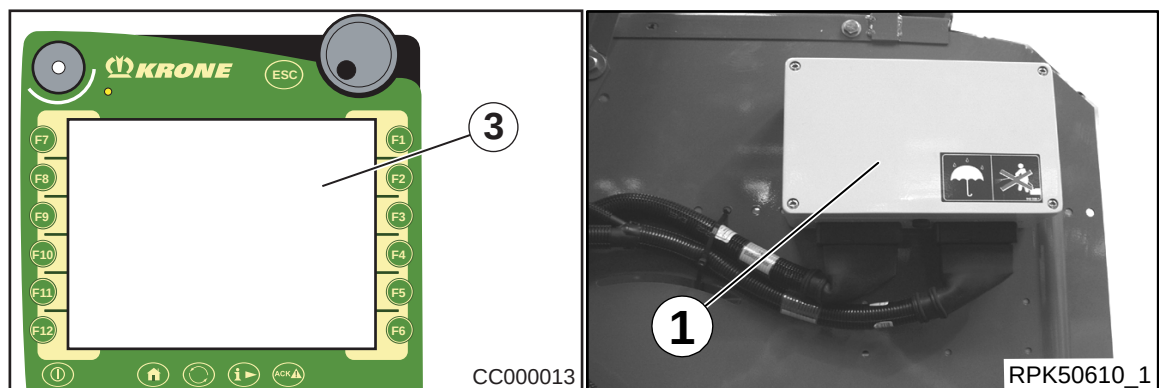


Fig.116

The electronic equipment of the machine consists essentially of the job computer (1), the terminal (3) and the control and function elements.

The job computer (1) is located on the front right of the machine under the side hood.

Its functions are:

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

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.

KRONE ISOBUS Terminal

10.1 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.

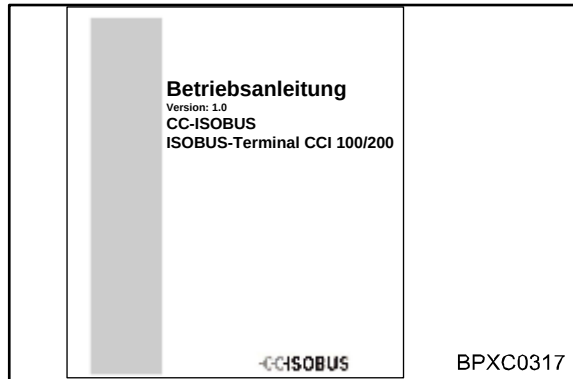


Fig. 117

10.2 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

When actuating the ISOBUS short cut button (1) of the terminal which is of the pushbutton design, a stop command is sent to the ISOBUS. This command will be evaluated by your connected ISOBUS- machine in order to initiate the accordant automatic measures in hazardous situations, if necessary.

If the ISOBUS short cut button is actuated, the accordant alarm mask will be shown in the display:

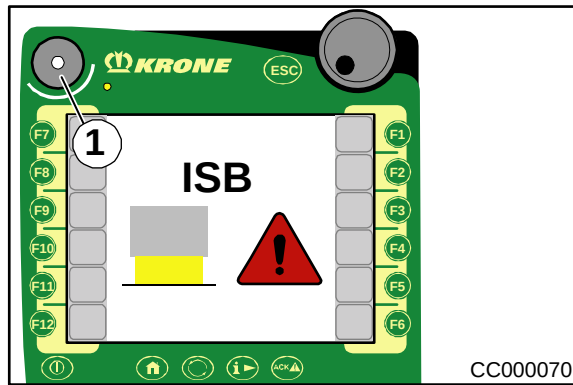


Fig. 118

The functions listed in the following are blocked by the job computer on machine side.

- Net tying / twine tying
- Valves, pick-up, cutter base

KRONE ISOBUS Terminal

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

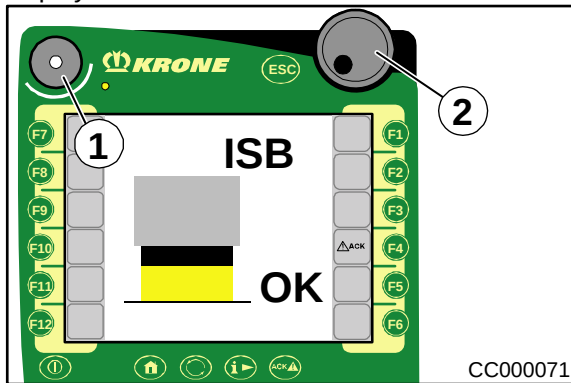


Fig. 119

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

10.2.1 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.

The following input mask appears after touching the touchscreen:



Fig. 120

- Enter the desired value and press **OK** to confirm.
- Press **ESC** to exit the input mask.
- Press function key **ESC** to close the currently displayed menu
- Press function key **ESC** a little longer to call the basic screen



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



Fig. 121



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.

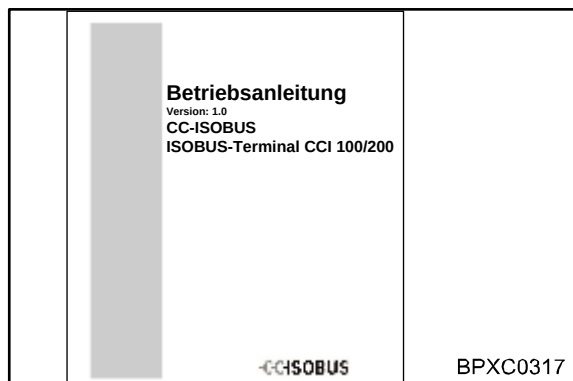


Fig. 122

KRONE ISOBUS Terminal

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

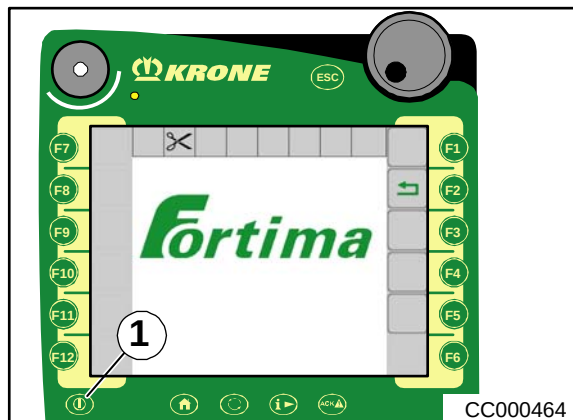


Fig. 123



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.



Note

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

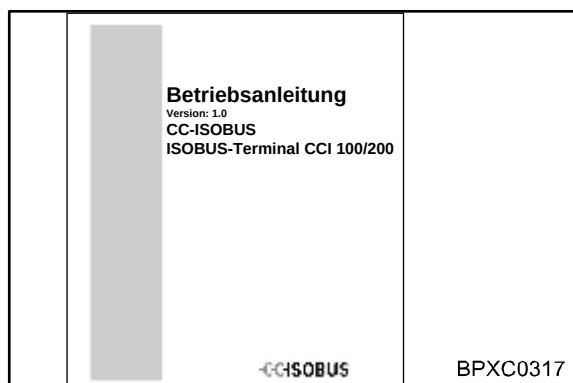


Fig. 124

- The “start-up screen” is shown in the display after the loading process. The terminal is now ready for operation.
- By pressing the function key  the basic screen appears.

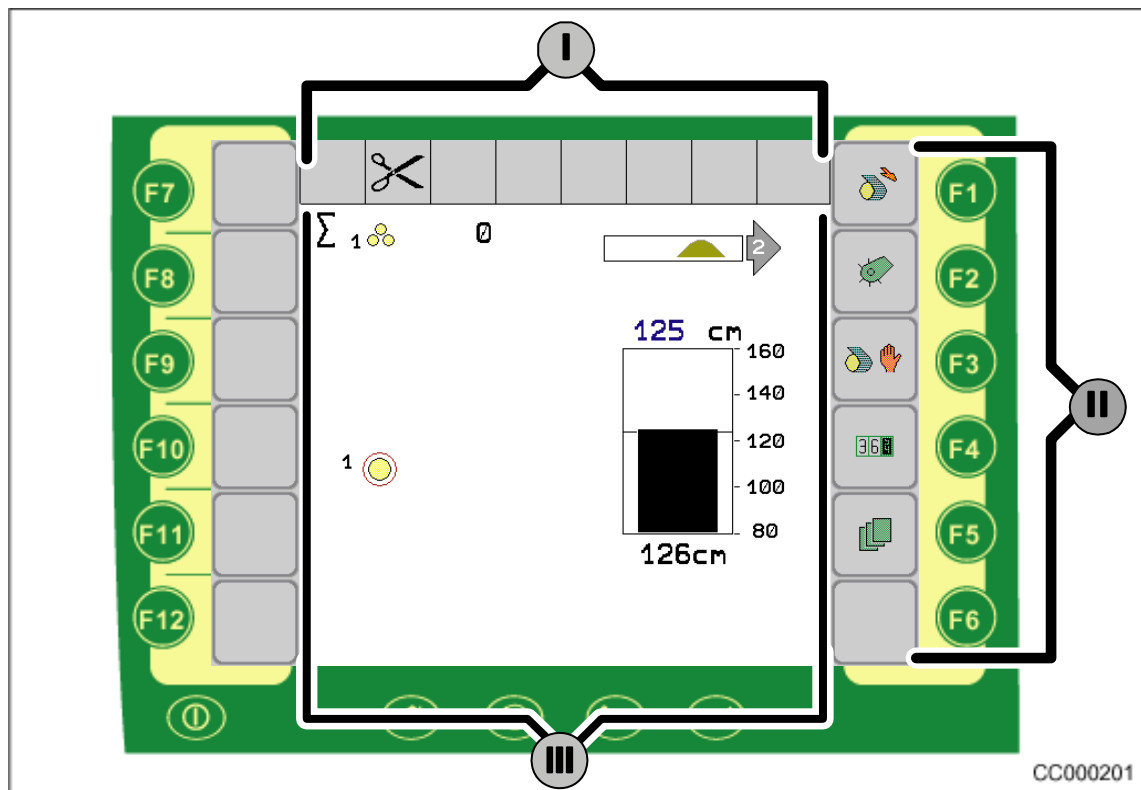
10.3
Basic Screen


Fig.125

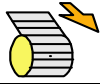
Status line (I)

Current states of the machine (depending on how it is equipped) are shown in the top line of the display:

-  Alarm message is pending
-  Blades are swivelled in
-  Blades are not swivelled in

KRONE ISOBUS Terminal

Description of the symbols (II) for the function keys (F1 to F6)

	Net feeding manual mode	Net is fed when actuating the function key
	Pre-select Pick-up valve	The activated setting is shown
	Pre-select valve cutter base adjustment	
	Pre-select manual mode	The activated mode is shown
	Pre-select automatic mode	
	Setting the customer counter	The menu 2-1 "Customer counter" is displayed (for settings see menu 2-1 "Customer counter") when actuating the function key.
	Menu level of the machine	By actuating the function key the menu level of the machine will be called.

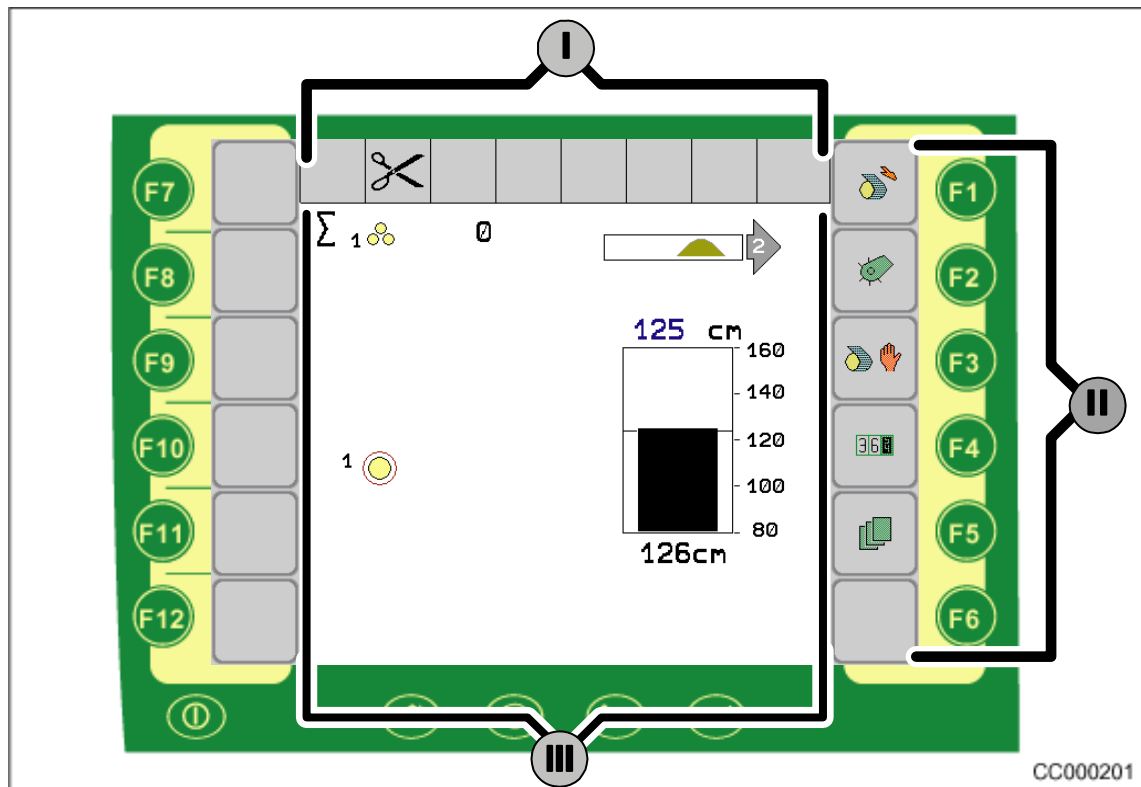


Fig.126

Displays on the main window (III) (depending on the machine configuration)

	Customer counter	
	Value of bale diameter/bale firmness reached (flashing)	
2N 	2G 	Net/Twine is fed
3N 	3G 	Net/Twine has not been tied
4N 	4G 	Net/Twine wrapping process is active
5N 	5G 	Net/Twine wrapping process is stopped
6N 	6G 	Net/Twine wrapping cut off
7N 	7G 	Net/Twine wrapping not cut off
8N 	8G 	Net/Twine wrapping finished

KRONE ISOBUS Terminal

10.3.1 Setting the Setpoint Bale Firmness

Fortima F

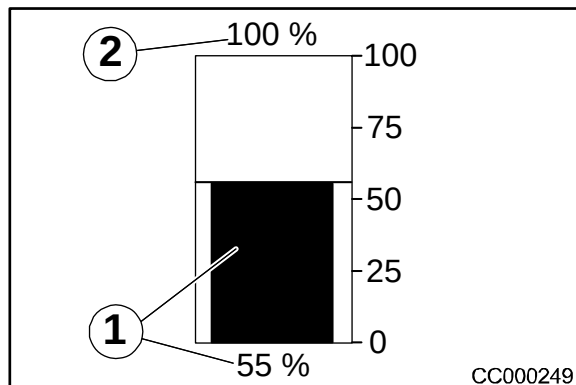


Fig. 127

Display Bale Firmness

The value (1) under the bar display and the height of the bar (1) indicate the current actual bale firmness as a %.

The value (2) above the bar display (2) shows the setpoint bale firmness set in per cent.

The bale firmness is specified by the user in the basic screen.

- You can use the scroll wheel to select the desired value (the selection box is highlighted in colour)
- Pressing the scroll wheel allows you to jump into the selection box (the selection box is highlighted in colour)
- Turning the scroll wheel increases or reduces the value
- Pressing the scroll wheel causes the setting to be applied and returns you from the selection box



Note

The values can also be set via the touchscreen.

10.3.2 Setting the Target Bale Diameter

Fortima V

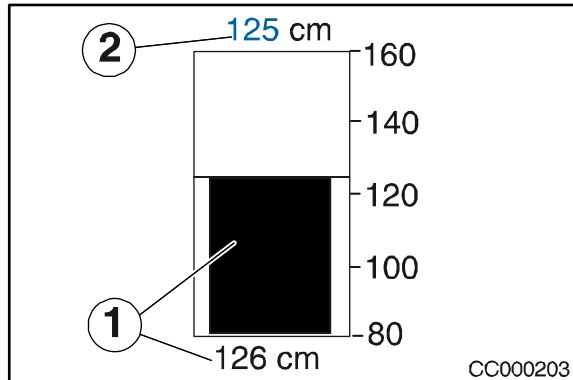


Fig. 128

Display Bale Diameter

The value (1) under the bar display and the height of the bar (1) indicate the current actual bale diameter in cm.

The value (2) above the bar display (2) shows the setpoint bale diameter set in cm.

The bale diameter is specified by the user in the basic screen.

- Select the desired value with the scroll wheel (the selection box is highlighted in colour)
- Pressing the scroll wheel allows you to jump into the selection box (the selection box is highlighted in colour)
- Turning the scroll wheel increases or reduces the value
- Pressing the scroll wheel causes the setting to be applied and returns you from the selection box



Note

The values can also be set via the touchscreen.

KRONE ISOBUS Terminal

10.4 Messages

Information message

The information message will appear only, if the main operation display has been set. The message will disappear automatically, when the cause for the information message has been removed.

Message bale chamber has not been closed

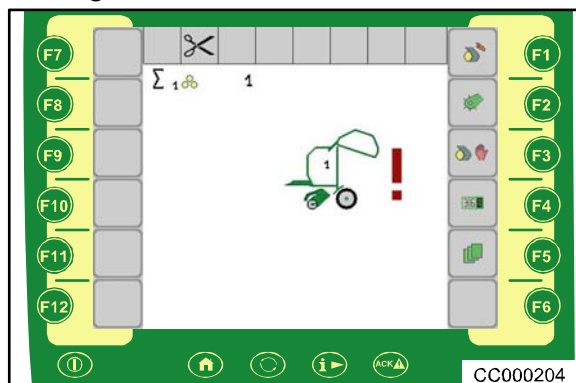
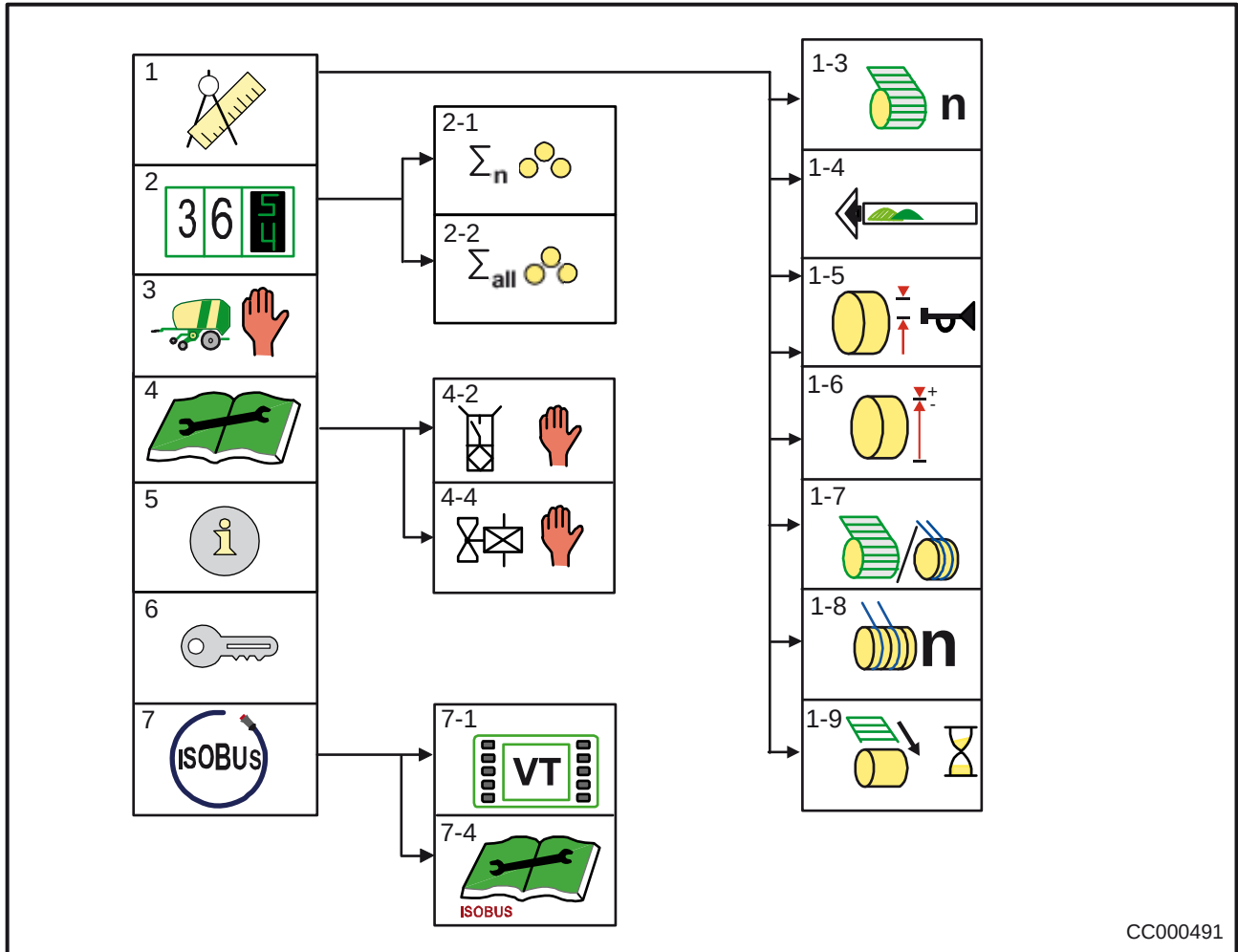


Fig.129

The softkeys in the lower line continue to be active whilst the information message is displayed.

10.5 Menu Level

10.5.1 Short Overview



CC000491

Fig. 130

1 Settings

- 1-3 Number of net wrappings
- 1-4 Sensitivity of direction display
- 1-5 Pre-signalling
- 1-6 Correction filling
- 1-7 Selection type of tying
- 1-8 Number of twine wraps
(only twine tying with magnetic coupling)
- 1-9 Tying start delay

2 Counter

- 2-1 Customer counter
- 2-2 Total counter

3 Manual operation

- 4 Service
- 4-2 Manual sensor test
- 4-4 Manual actuator test

5 Info

6 Technician

ISOBUS

- 7-1 Virtual Terminal
- 7-4 ISOBUS diagnostics

KRONE ISOBUS Terminal

10.5.2 Calling up the menu level

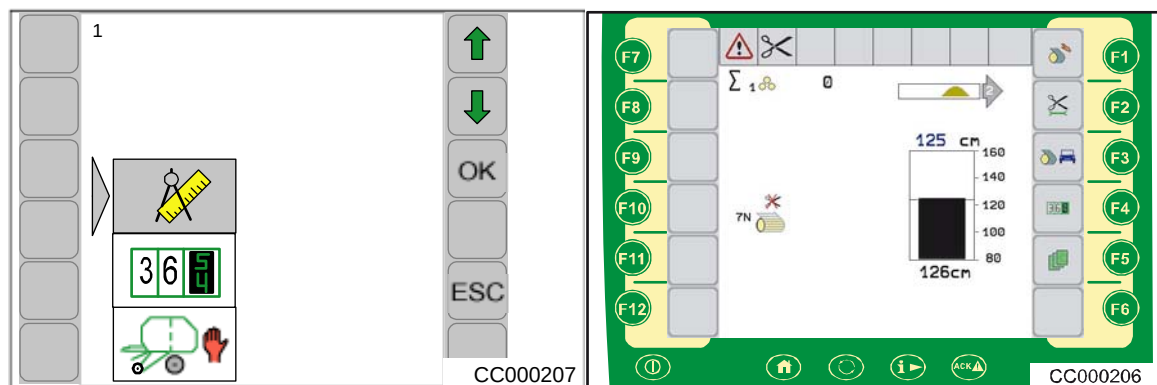


Fig.131

By pressing the function key  in the main window you get into the menu level of the machine.

The menu level is shown in the display.

The menu level is divided into six main menus:

	= main menu 1 "Settings"
	= main menu 2 "Counters"
	= main menu 3 "Manual operation"
	= main menu 4 "Service"
	= main menu 5 "Info"
	= main menu 6 "Technician"

Select the desired main menu by pressing the function  key or . The selected symbol is shown in reverse colours.

- Pressing the function key **OK** brings up the menu level of the main menu that is selected.
- Pressing the function key **ESC** closes the called up menu.
- Pressing the function key **ESC** and holding it down brings up the basic screen.

10.6 Main Menu 1 „Settings“

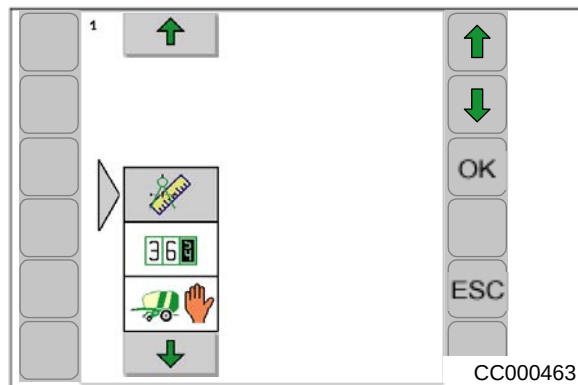
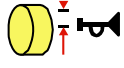


Fig. 132

- By pressing the function key  in the basic screen you get into the menu level of the machine
- Select main menu 1 () by pressing function key  or , the symbol is shown in reverse colours
- Press function key **OK**

The display shows menu level 1 "Settings". The menu level 1 "Settings" is divided into the following menus, depending on how the machine is equipped:

-  **n** Menu 1-3 "Number of Net Winds"
-  Menu 1-4 "Sensitivity of direction display"
-  Menu 1-5 "Pre-Signalling"
-  Menu 1-6 "Filling Correction"
-  Menu 1-7 "Selection type of tying"
-  **n** Menu 1-8 "Number of Twine Wraps"
-  Menu 1-9 "Tying Start Deceleration"

KRONE ISOBUS Terminal

10.6.1 Menu 1-3 "Number of net winds"

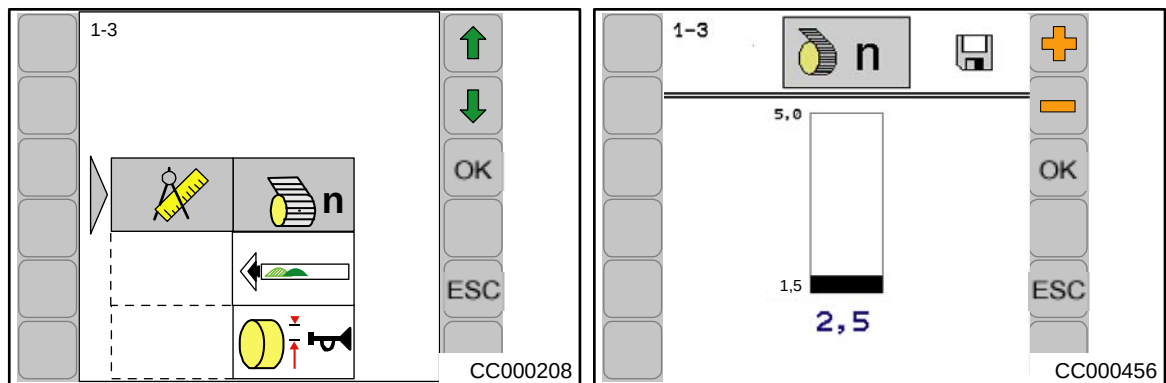


Fig. 133

Calling the menu

Main menu 1 "Settings" appears.

- Press function key  or  to select menu 1-3 . The symbol is highlighted in grey.
- Press function key **OK**

The display shows menu 1-3 "Number of net winds".

The  icon in the upper line indicates that the displayed status has been saved.

Setting the number of net winds

The number of net winds is displayed in wraps (e.g. 2,5 equals 2,5 wraps).

- Use the function key  or  to set the desired number of net winds. The  icon in the upper line disappears
- Press function key **OK**. The set status is saved, the  icon appears in the upper line
- Press function key **ESC** to close the currently displayed menu
- Press function key **ESC** a little longer to call the basic screen

10.6.2 Menu 1-4 "Sensitivity of direction display"

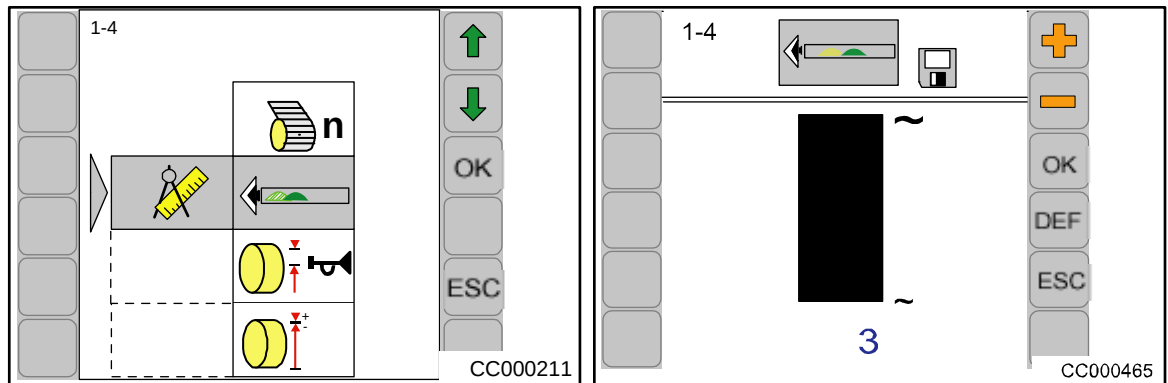


Fig. 134

Setting the sensitivity of the direction display

Calling the menu

Main menu 1 "Settings" appears.

- Press function key  or  to select menu 1-4 . The symbol is highlighted in grey.
- Press function key **OK**

The display shows menu 1-4 "Sensitivity of direction display".

The progress bar indicates the set sensitivity. The higher the bar, the greater the sensitivity of the direction display. The  icon in the upper line indicates that the displayed value has been saved.

Setting and saving the sensitivity of direction display

The higher the sensitivity of direction display is set, the stronger the motion indication in the form of arrows (1) ().

- Use function key  or  to set the sensitivity. The  icon in the upper line disappears
- Press function key **OK**. The set sensitivity is saved, the  icon appears in the upper line
- Press function key **ESC** to close the currently displayed menu
- Press function key **ESC** a little longer to call the basic screen



Note

An even filling of the bale chamber ensures optimally shaped bales and additionally protects the floor conveyor chains of the machine. Therefore it is recommended to set the sensitivity of direction display.

KRONE ISOBUS Terminal

10.6.3 Menu 1-5 „Pre-Signalling"

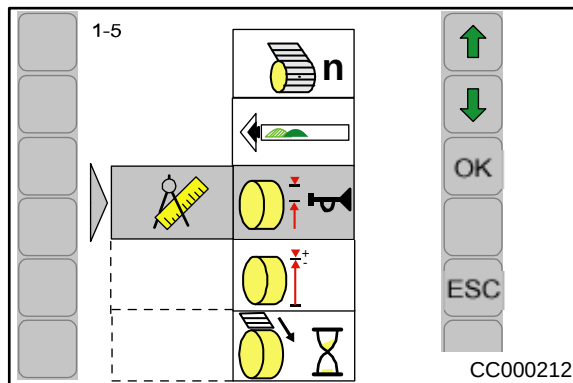


Fig. 135



Note

Pre-signalling indicates how far in advance it is signaled that the setpoint value

- of bale diameter (Fortima V) or
- of bale firmness (Fortima F)

will be reached shortly.

Calling the menu

Main menu 1 “Settings” is called.

- Select menu 1-5  by pressing function key  or , the symbol is highlighted in grey.
- Press function key **OK**

The display shows menu 1-5 “Pre-signalling”.

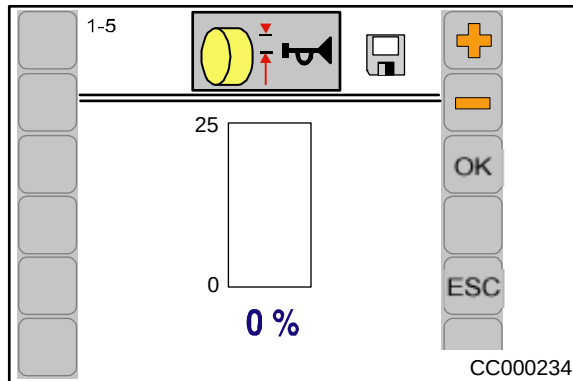
The symbol  in the upper line indicates that the displayed value is saved.



Setting pre-signalling:

Fortima F

The value is displayed as percentage.



Fortima V

The value is displayed in cm.

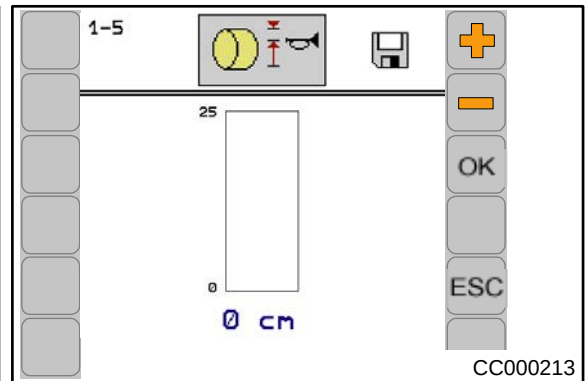


Fig. 136

- Set the desired time delay by using function keys **+** or **-**, symbol in the upper line goes out
- Press function key **OK**, the set time delay is saved, the symbol appears in the upper line.
- Pressing function key **ESC** closes the called up menu
- Pressing function key **ESC** and holding it down brings up the basic screen

Example

Set target value of bale diameter: 1.50 m

Set value of pre-signalling: 25 cm

The audio signal sound can be heard if the actual value of the bale diameter is 1.25 m.

KRONE ISOBUS Terminal

10.6.4 Menu 1-6 „Filling Correction“

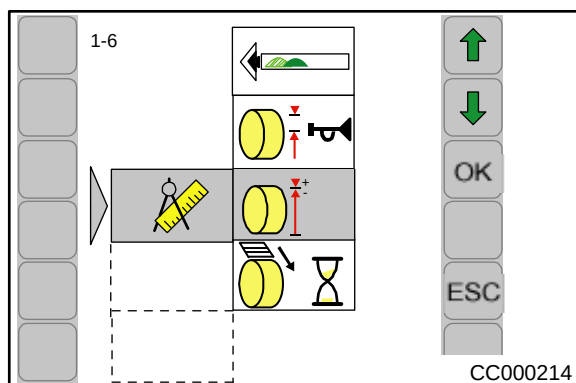


Fig. 137



Note

If the bale size or firmness is too great or not great enough, bale size and firmness can be corrected within a predefined range via menu 1-6 "Filling Correction".

Calling the Menu

Main menu 1 "Settings" is called.

- Select menu 1-6  by pressing function key  or , The symbol is highlighted in grey.
- Press function key **OK**

The display shows menu 1-6 "Filling Correction".

The symbol  in the upper line indicates that the displayed value is saved.

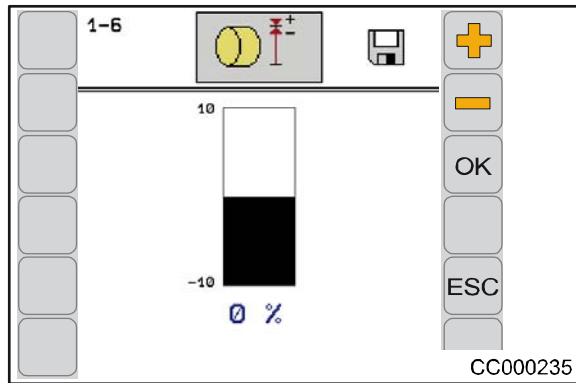


KRONE ISOBUS Terminal

The values can be corrected in the following areas:

Fortima F

Bale firmness: -10 % to +10 %



Fortima V

Bale size: -10 cm to +10 cm

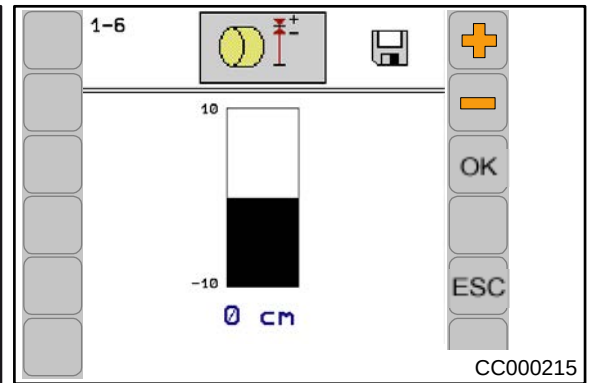


Fig. 138

- Increase or reduce the desired value by using function key  or  , the symbol  in the upper line goes out
- Press function key **OK**

The symbol  in the upper line indicates that the displayed value is saved.

- Pressing the function key **ESC** closes the called up menu
- Pressing the function key **ESC** and holding it down brings up the basic screen

KRONE ISOBUS Terminal

10.6.5 Menu 1-7 "Select type of tying"

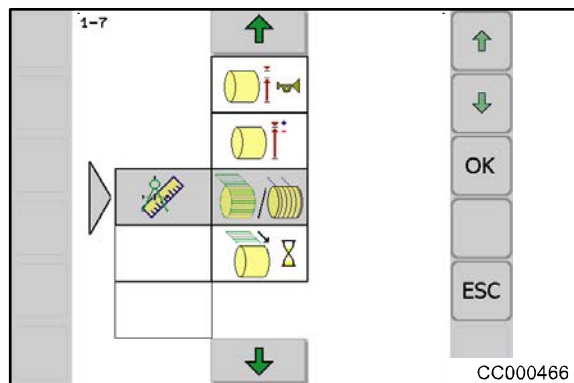
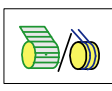


Fig. 139

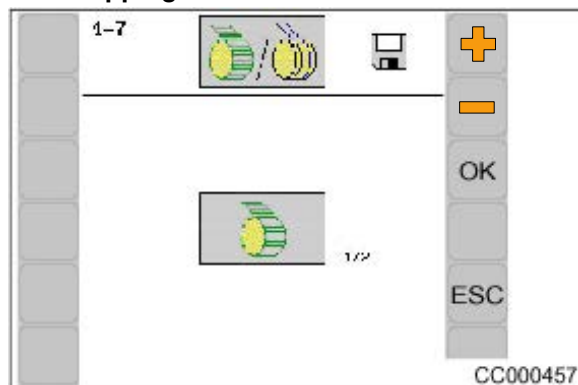
Calling the menu

Main menu 1 "Settings" appears.

- Press function key  or  to select menu 1-7 . The icon is colour highlighted
 - Press function key **OK**
- The display shows menu 1-7 "Type of tying".

Setting the type of tying

Net wrapping



Twine tying

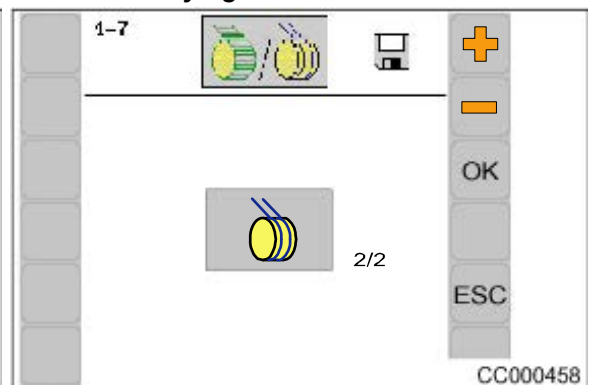


Fig. 140

- Press function key  or  to set the desired type of tying. The  icon in the upper line disappears.
 - Press function key **OK**
- The  icon in the upper line indicates that the displayed value has been saved.
- Press function key **ESC** to close the currently displayed menu
 - Press function key **ESC** a little longer to call the basic screen

10.6.6

Menu 1-8 „Number of Twine Wraps“

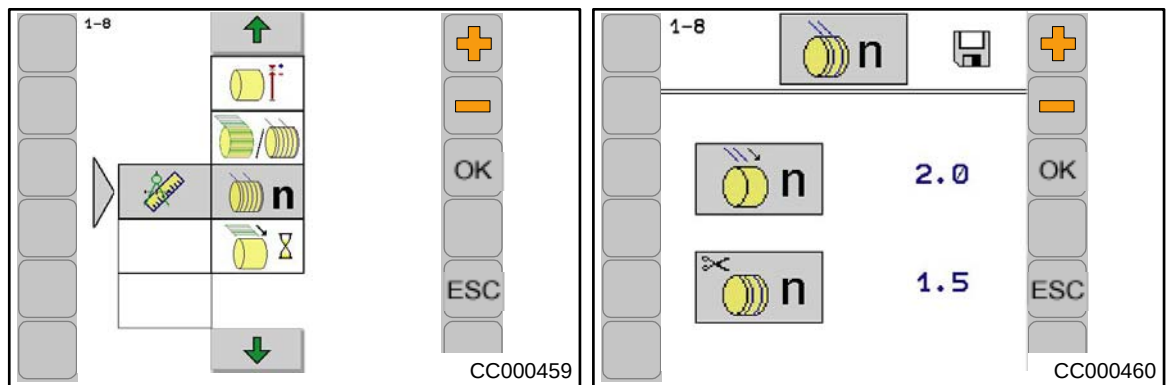


Fig. 141

The number of twine wraps can be entered via menu 1-8 “Number of Twine Wraps”.

Calling the Menu

Main menu 1 “Settings” is called.

- Select menu 1-8  by pressing function key  or , the symbol is highlighted in colour.
- Press function key **OK**

The display shows menu 1-8 “Number of Twine Wraps”. The following functions can be adjusted in the menu:



“Inserting Twine Wraps”



“Cutting Off Twine Wraps”

**Note**

The settings in the menu 1-8 “Number of Twine Wraps” can only be changed via touch screen or by using the scroll wheel.

KRONE ISOBUS Terminal

10.6.7 Menu 1-9 „Tying Start Delay“

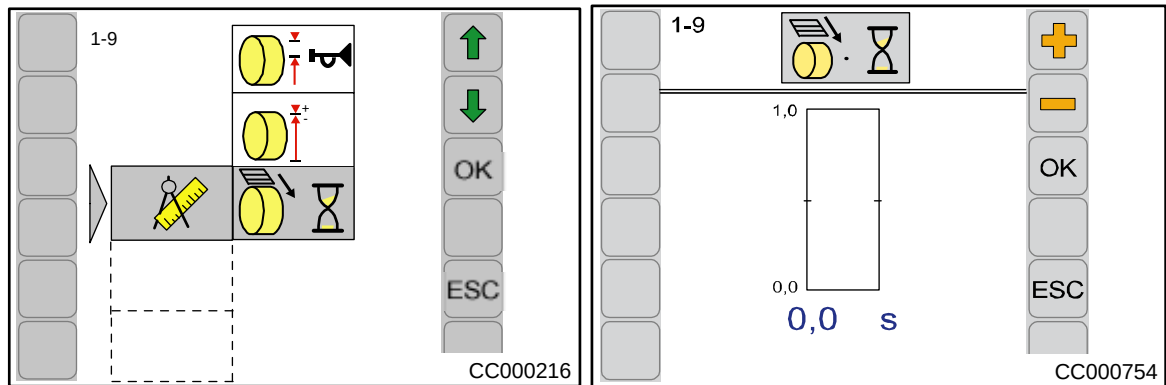


Fig. 142

Calling the menu

Main menu 1 “Settings” is called.

- Select menu 1-9  by pressing function key  or , the symbol is highlighted in grey.

- Press function key **OK**

The display shows menu 1-9 “Tying Start Delay”.

Setting the tying start delay

The time delay is displayed in seconds.



Note

Tying start delay indicates how much time there is between

- “Setpoint value of bale diameter reached” (Fortima V) or
 - “Setpoint value of bale firmness reached” (Fortima F)
- and “Triggering tying process” (in automatic mode).

Due to this function, the driver gets sufficient time to move tractor and machine to a complete standstill before tying process starts automatically.

- Use function key  or  to set the desired time delay, the symbol  in the upper line will disappear

- Press function key **OK**

The symbol  in the upper line indicates that the displayed value is saved.

- Pressing function key **ESC** and holding it down closes the called up menu
- Pressing function key **ESC** and holding it down brings up the basic screen

10.7

Main menu 2 "Counters"

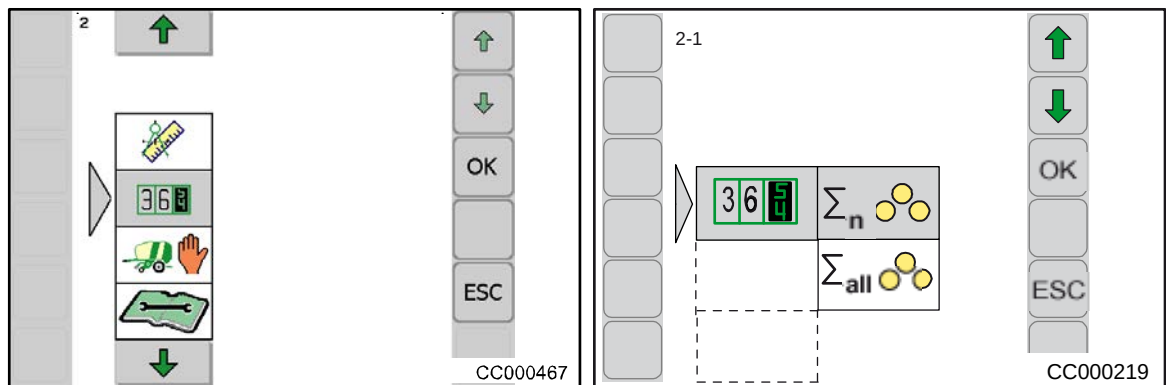


Fig. 143

Calling the main menu

- Press function key  to access the menu level via the basic screen
- Press function key  or  to select main menu 2 . The symbol is highlighted in grey.
- Press function key **OK**

The display shows menu level 2 "Counters".

Menu level 2 "Counters" is divided into two menus:

$\sum_n$  = Menu 2-1 "Customer counters"

$\sum_{all}$  = Menu 2-2 "Total counters"

KRONE ISOBUS Terminal

10.7.1 Menu 2-1 „Customer Counter“

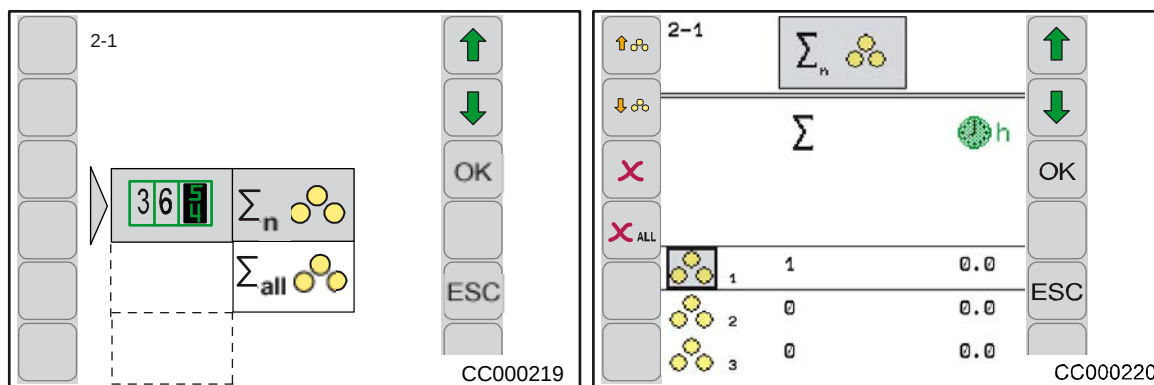


Fig. 144

Calling the menu

Main menu 2 "Counters" is called

- Select menu 2-1 Σ_n by pressing function key $\uparrow$ or $\downarrow$, the symbol is highlighted in grey.
- Press function key **OK**

The display shows menu 2-1 "Customer Counter".

Meaning of the symbols:



= Total number of bales



= Active customer counter (1 - 20)



= Operating hours counter (counts only when the terminal is switched on)

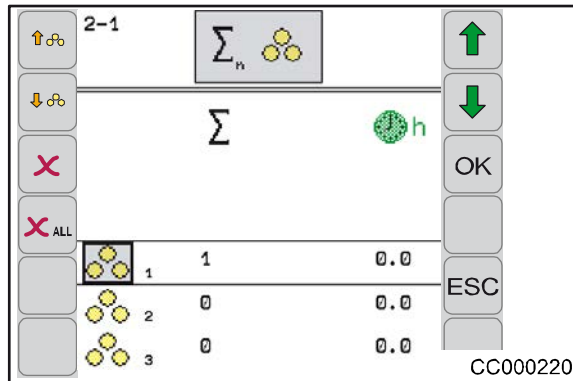
Activating customer counters


Fig.145

- Press function key  or  to select the desired customer counter and activate by pressing the function key **OK**. The desired customer counter (in this case customer counter 1) is highlighted in grey.

Changing the number of bales

- Press function key  or  to select the desired customer counter (the customer counter must not be activated)
- Increase the number of bales by pressing the function key 
- Reduce the number of bales by pressing the function key 

Deleting the customer counter

- Press function key  or  to select the desired customer counter (the customer counter must not be activated)
- By pressing the function key  the selected customer counter is set to zero
- Pressing the function key **ESC** closes the called up menu
- Pressing the function key **ESC** and holding it down brings up the basic screen

KRONE ISOBUS Terminal

10.7.2 Menu 2-2 „Total Bale Counter“

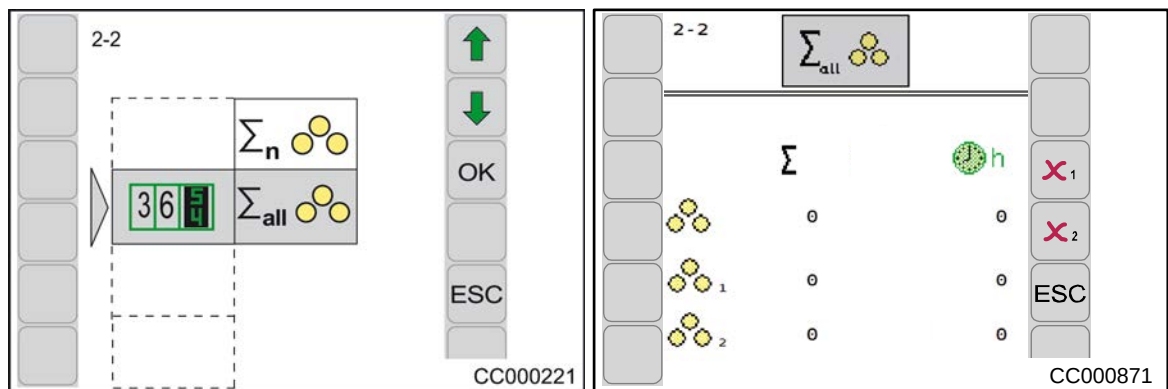


Fig. 146

Calling the menu

Main menu 2 “Counters” is called

- Select menu 2-2 Σ_{all}  by pressing function key  or , the symbol is highlighted in grey.
- Press function key **OK**

The display shows menu 2-2 “Total Bale Counter”. The total number of bales is the sum of all pressed bales. They are not assigned to any customer counter.

Meaning of the symbols:

-  = Bale counter (cannot be deleted)
-  = Operating hours counter (counts only when the terminal is switched on)
-  = Season counter 1 (can be deleted)
-  = Season counter 2 (can be deleted)

Deleting season counter 1 or daily counter 2

- Season counter is set to zero by pressing function key **X1**.
- Season counter 2 is set to zero by pressing function key **X2**.
- Pressing function key **ESC** closes the called up menu.
- Pressing function key **ESC** and holding it down brings up the basic screen.

10.8

Main menu 3 "Manual operation"

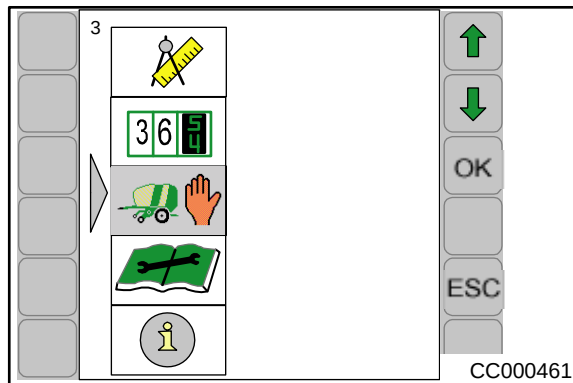


Fig. 147

Calling the menu

- Press function key  to access the menu level via the basic screen
- Press function key  or  to select main menu 3 ( ). The symbol is highlighted in grey.
- Press function key **OK**

The display shows menu level 3 "Manual operation".

KRONE ISOBUS Terminal

10.8.1 Menu 3-2 "Position of net motor"

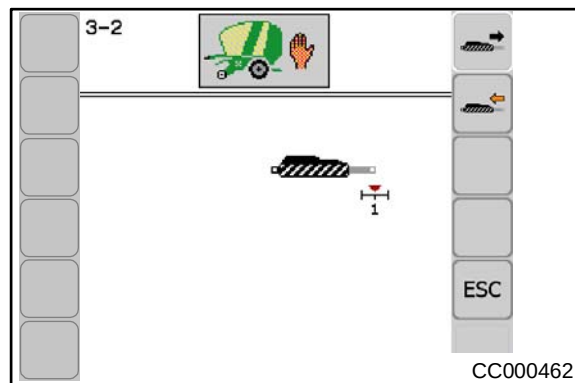


Fig. 148

Calling the menu

Main menu 3 "Manual operation" is called

- Press function key  or  to select menu 3-2 ( ). The symbol is highlighted in grey.
- Press function key **OK**

The following current states of the machine are shown in the display:

 = Motor in the centre position

 = Positions not defined

Moving the motor

- Press function key  to move the motor in.
- Press function key  to move the motor out.
- Press function key **ESC** to close the currently displayed menu
- Press function key **ESC** a little longer to call the basic screen



WARNING! – Crush hazard due to moving motor!

Personal injury.

- To prevent injury, do not stand in the area of the extending or retracting motor.

10.9

Main menu 4 "Service"

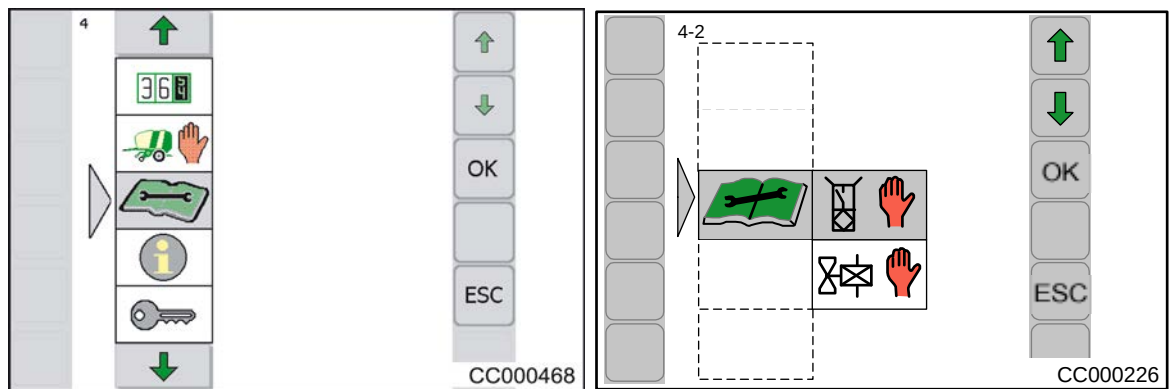


Fig.149

Calling the main menu

- Press function key  to access the menu level via the basic screen
- Press function key  or  to select main menu 4 (). The icon is shown inverted
- Press function key **OK**

The display shows menu level 4 "Service".

Menu level 4 "Service" is divided into two menus:



= Menu 4-2 "Manual sensor test"



= Menu 4-4 "Manual actuator test"

KRONE ISOBUS Terminal

10.9.1 Menu 4-2 "Manual sensor test"

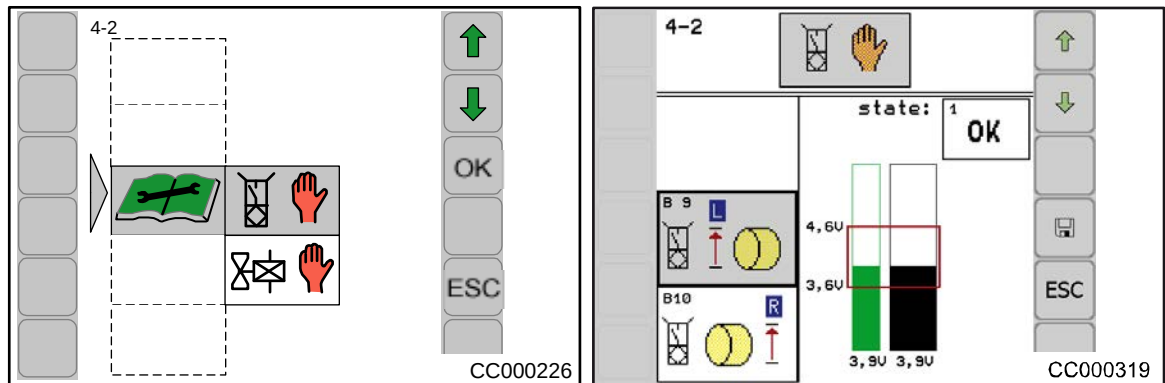


Fig.150

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



Caution!

The P.T.O. shaft must not be turning during the sensor test.

Displaying the menu

Main menu 4 "Service" is called.

- You can select menu 4-2   by pressing the function key  or . The symbol is highlighted in grey.
- Press the rotary potentiometer
- Press function key **OK**

Selecting the sensor

- Select the sensor by pressing the function key  or 
- The selected sensor is displayed inversely and is tested.

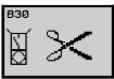
Setting values:

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.

To adjust the sensors, refer to chapter Maintenance "Setting the Sensors".

Diagnostics – Namur sensors
Possible sensors (depending on how the machine is equipped)

No.	Sensor symbol	Description
B11		Bale chamber closed left
B12		Bale chamber closed right (Fortima V)
B30		Blade monitoring
B31		Engine tying centre
B32		Tying runs
B33		Twine stop

State:

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

For information on the position of the sensors, please refer to chapter Maintenance “Position of Sensors”.

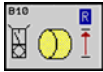
KRONE ISOBUS Terminal

Diagnostics – analogue sensors

Setting values:

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

Possible analogue sensors (depending on how the machine is equipped)

No.	Sensor symbol	Description
B9		Bale diameter left (Fortima V) Bale firmness left (Fortima F)
B10		Bale diameter right (Fortima V) Bale firmness right (Fortima F)

State:



Broken cable or short circuit



Error Defect in the sensor or job computer

For information on the position of the sensors, please refer to chapter Maintenance "Position of Sensors".

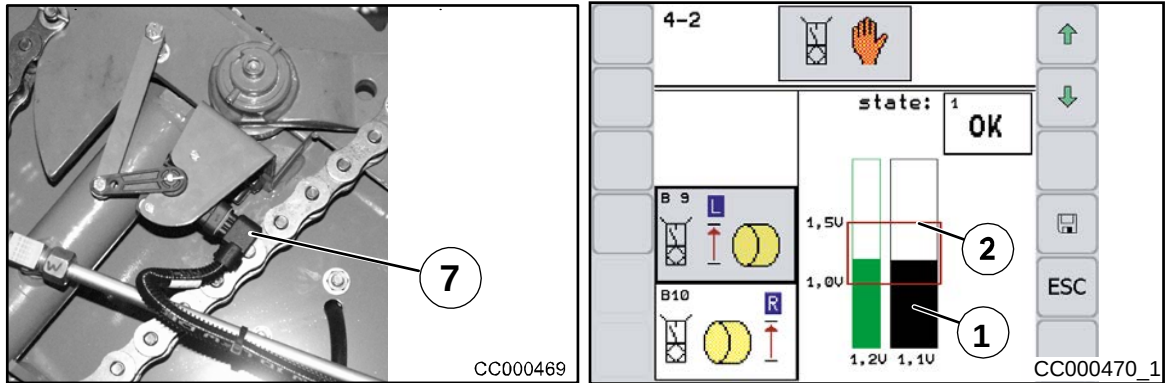
Sensor B9/B10 Adjusting the bale diameter (Fortima V)


Fig. 151


Caution!

The bale chamber must be closed and empty. Front tensioning rocker must be positioned flush with the stop.

If the bar (1) is not inside the rectangle (2) when the bale chamber is closed and emptied, the corresponding sensor (7) must be adjusted mechanically.

To do this:

- Loosen the sensor (7) and turn it in the oblong hole until the bar (1) is positioned inside the rectangle (2) on the bar display.


Note

An audio signal sounds if the bar (1) is inside the rectangle (2).

- Tighten the sensor (7).


Note

Saving is only possible if the bar (1) is inside the rectangle (2) in the bar display.

Storing a value:

- Press the **OK** function key

The  icon in the top line indicates that the displayed value is saved.

KRONE ISOBUS Terminal

Setting sensor B9/B10 bale firmness (Fortima F)

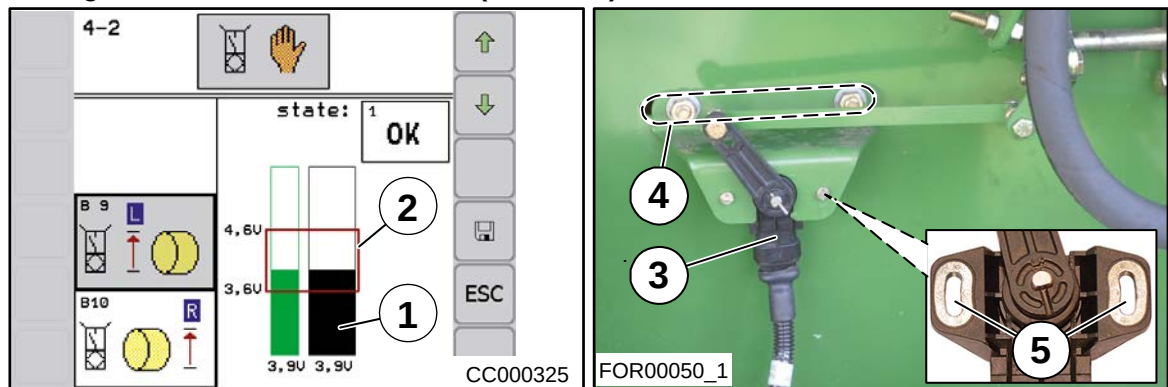


Fig. 152



Caution!

The bale chamber must be open and empty.

If the bar (1) is not inside the rectangle (2) when the bale chamber is open and empty, the respective sensor (2) must be adjusted mechanically.

To do this:

- Loosen the sensor and move it in the oblong hole (4) until the bar (1) in the display is inside the rectangle (2).
- If necessary, move sensor additionally in the oblong holes (5).



Note

An audio signal will be heard if the bar (1) in the display is inside the rectangle (2).

- Tighten the screw connections of sensor (3).



Note

Saving is only possible if the bar (1) in the display is inside the rectangle (2).

Saving value:

- Press function key **OK**

The symbol  in the upper line indicates that the displayed value is saved.

Diagnostics – power supply voltage

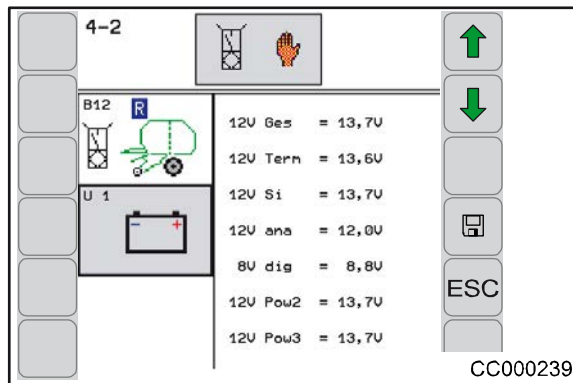


Fig. 153

No.	Sensor icon	Description
B1	U1 	power supply voltage

Nominal voltages:

12V Ges:	12 - 14,5 V
12V Ter:	12 - 14,5 V
SS_5V:	4,5 - 5,5 V
8V ana:	8,5 - 9,1 V
8V dig:	8,5 - 9,1 V
12V P2:	12 - 14,5 V

- Pressing the function key **ESC** closes the called up menu
The display shows menu level 4 "Service".
- Pressing the function key **ESC** and holding it down brings up the basic screen

KRONE ISOBUS Terminal

10.9.2 Menu 4-4 Manual 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.

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.

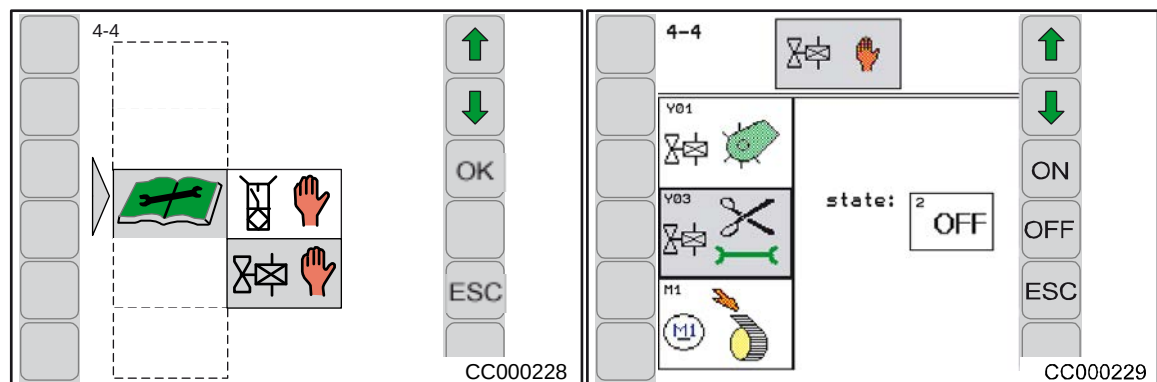


Fig. 154



Calling the menu

Main menu 4 "Service" is called.

- Pressing the function key  or  to select Menu 4-4  . The symbol is highlighted in grey.

- Pressing the function key **OK**

The display shows menu level 4-4 „Manual actuator test“

Selecting the actuator

- Pressing the function key  or  to select Actuator.
The symbol is highlighted in grey.

- Pressing the function key **ESC** closes the called up menu
The display shows menu level 4 "Service".

- Pressing the function key **ESC** and holding it down brings up the basic screen

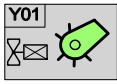
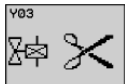
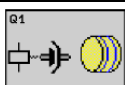
KRONE ISOBUS Terminal

Diagnostics – digital actuators

Errors are only displayed if the actuator is turned on and a test is possible for the actuator (see the table called "Possible digital actuators"). The actuators can also be checked on the LED at the plug, if necessary.

- Press function key **ON**

Possible digital actuators (depending on how the machine is equipped)

No.	Actuator symbol	Description
Y01		Pick-up valve
Y03		Blade base position valve
Q1		Coupling (twine tying)

State:

- ① **ON** Actuator on
- ② **OFF** Actuator off
- ③  General actuator error
- ④  No power supply; fuse is probably defective

- Pressing the function key **ESC** closes the called up menu
The display shows menu level 4 "Service".
- Pressing the function key **ESC** and holding it down brings up the basic screen

Possible engines (depending on how the machine is equipped)

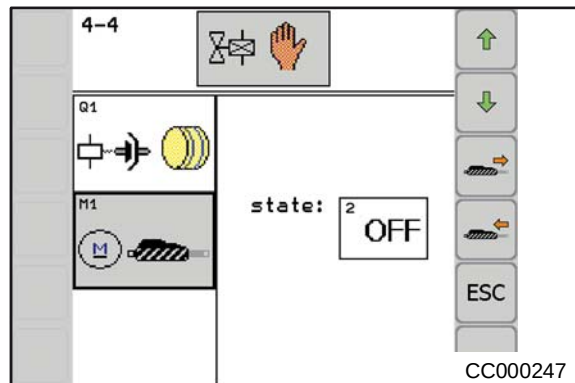


Fig. 155

- Extend engine by pressing function key . The function is only momentary-action.
- Retract engine by pressing function key . The function is only momentary-action.

No.	Actuator symbol	Description
M1		Setting motor net tying / twine tying

State:

- ① ON Actuator on
- ② OFF Actuator off
- ③  General actuator error

- Pressing the function key **ESC** closes the called up menu
The display shows menu level 4 "Service".
- Pressing the function key **ESC** and holding it down brings up the basic screen

KRONE ISOBUS Terminal

10.10 Main Menu 5 „Information“

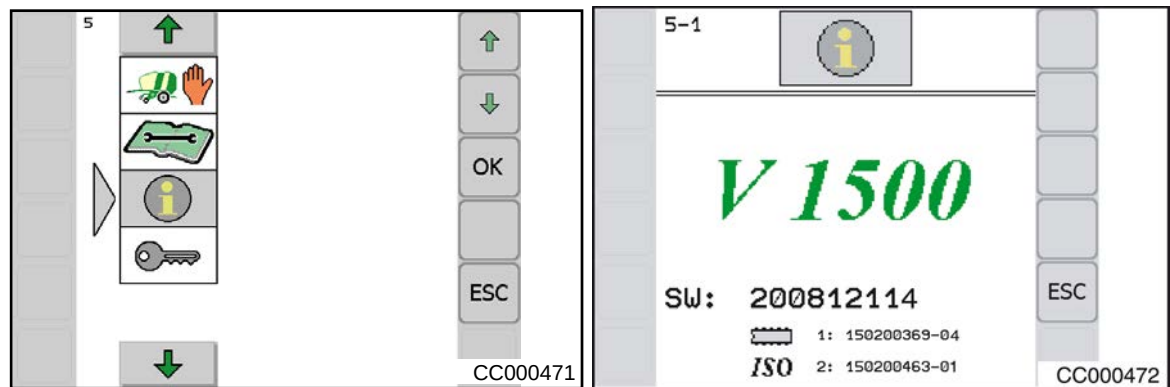


Fig. 156

Calling the Main Menu

- By pressing the function key  in the basic screen you get into the menu level of the machine
 - Select main menu 5 () by pressing function key  or , the symbol is shown in reverse colours
 - Press function key **OK**
- The display shows menu 5 "Info".

Complete software version of the machine

SW	= Complete software version of the machine
	= Software of the job computer
ISO	= ISO software version of the job computer

- Pressing the function key **ESC** closes the called up menu
The display shows menu level 5 "Info".
- Pressing the function key **ESC** and holding it down brings up the basic screen

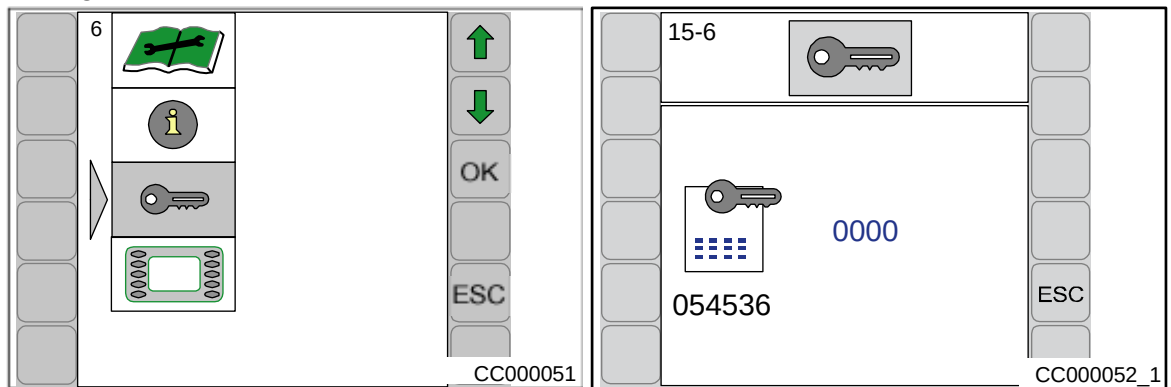
10.11
Main Menu 6 Technician
Calling the Main Menu


Fig. 157

- By pressing function key  in the basic screen you get into the menu level
- Select main menu 6  by pressing function key  or . The symbol is highlighted in grey.
- Press function key **OK**

Main menu 6 "Technician" is password-protected.
The display shows the password query.

KRONE ISOBUS Terminal

10.12 Main Menu 7 ISOBUS

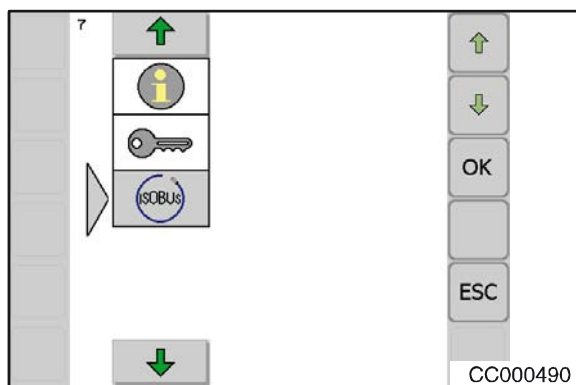


Fig. 158

Calling the Main Menu

- By pressing the function key  from the basic screen you get into the menu level of the machine
 - Select main menu 7 () by pressing function key  or , the symbol is highlighted in colours
 - Press function key **OK**
- The display shows menu level 7 "ISOBUS".

10.12.1 Menu 7-1 Virtual Terminal (VT)

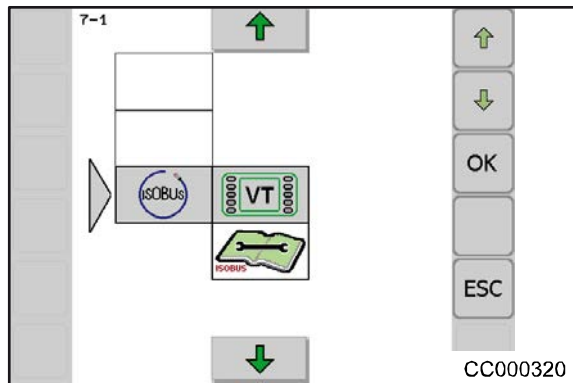
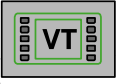


Fig. 159

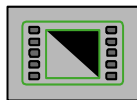
Calling the Main Menu

Main menu 7 "ISOBUS" is called.

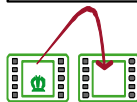
- Select menu 7-1 () by pressing function key  or , the symbol is highlighted in colours
- Press function key **OK**

The display shows menu level 7-1 "Virtual Terminal (VT)".

The menu "Virtual Terminal (VT)" is divided into the following menus:



= Menu 1-7-1 "Switching day-night lighting"



= Menu 1-7-4 „Switching to a further terminal“

- Pressing the function key **ESC** closes the called up menu
- Pressing the function key **ESC** and holding it down brings up the basic screen

KRONE ISOBUS Terminal

10.12.2 Menu 7-1-1 Select day/night display lighting

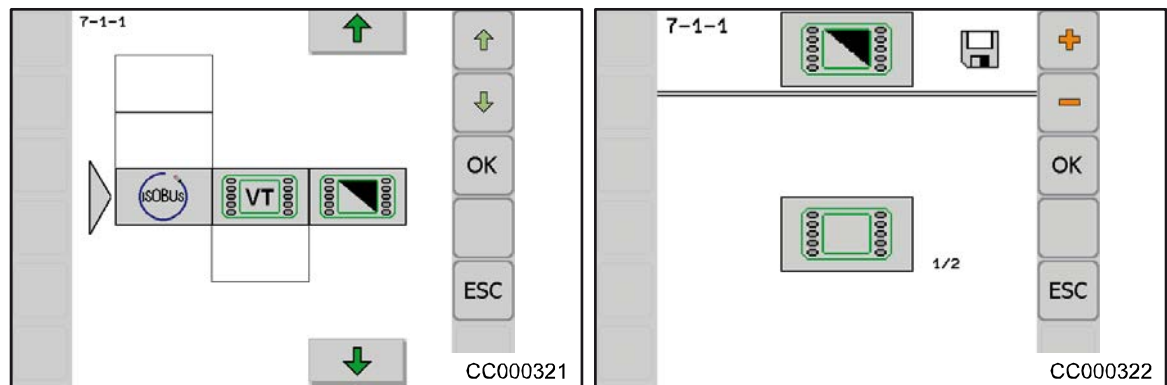


Fig. 160

The "Select day/night display lighting" menu can be used to adjust the brightness of the display. Menu 7-1 "Virtual terminal (VT)" is opened.

- Press the  or  function button to select menu 7-1-1 ; the icon is highlighted in colour
- Press the **OK** function button

The display shows the screen  1/2 "Day lighting" in menu 7-1-1 "Select day/night display lighting".

- Press the  button to switch to the  screen

The display shows the screen  2/2 "Night lighting" in menu 7-1-1 "Select day/night display lighting".

10.12.3 Menu 7-1-4 Switch to different terminal



Note

- Menu 7-1-4 only appears if several ISOBUS terminals are connected.
- Menu 7-1-4 can be used to switch to the next connected terminal (depending on how many terminals are connected).
- The first time you switch, the configuration of the machine is loaded to the next terminal. Loading may take a few minutes. The configuration is saved in the memory of the next terminal.



Note

The next time a call is made, the machine is no longer available in the previous terminal.



Note

When restarting, the system first attempts to start the last terminal used. If the last terminal used is no longer available, the restart is delayed as the system looks for a new terminal and loads the specific menus to that terminal. Loading may take a few minutes.

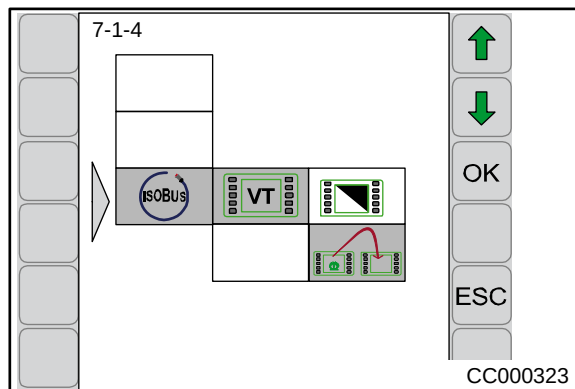


Fig. 161

Opening the menu

Main menu 7-1 "Virtual terminal (VT)" is opened.

- Press the  or  function button to select menu 7-1-4 (); the icon is highlighted in colour.
- Press the **OK** function button

The displays shows menu level 7-1-4 "Switch to different terminal".

Press the function key **OK** or () on the touch screen to switch to a different connected terminal.

- Pressing the **ESC** function button closes the open menu.
- Pressing and holding the **ESC** function button opens the home screen.

KRONE ISOBUS Terminal

10.13 Menu 7-4 ISOBUS Diagnostics

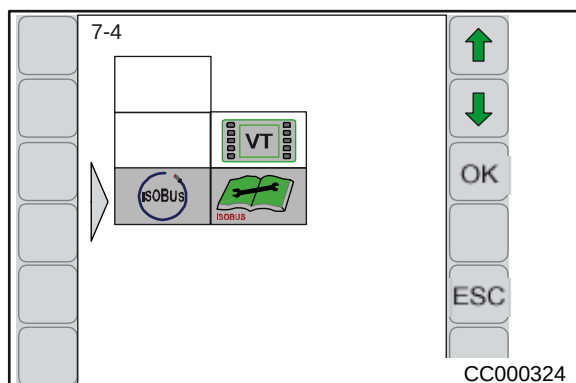


Fig. 162

Calling the Menu

Main menu 7 "ISOBUS" is called.

- Select menu 7-4  by pressing function key  or , the symbol is shown in reverse colours
 - Press function key **OK**
- The display shows menu 7-4 "ISOBUS diagnostics".

10.13.1 Menu 7-4-2 Diagnostics Auxiliary Functions (AUX)

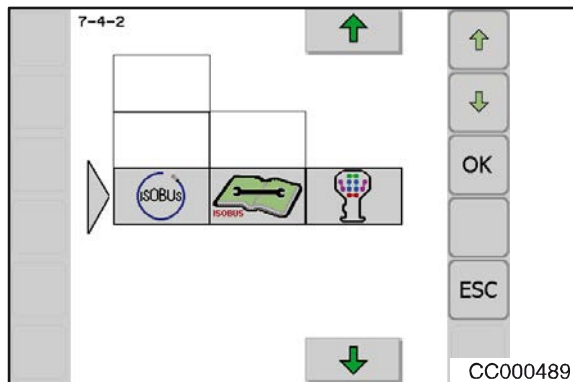


Fig. 163



Note

When carrying out auxiliary function via joystick, net or twine is shot in depending on how the machine is fitted and depending on the type of tying that is set.

Calling the Menu

Menu 7-4 "ISOBUS diagnostics" is called.

The menu 7-4-2 "Diagnostics Auxiliary Function" shows you with which key on the joystick the auxiliary function is carried out.

- Select menu 7-4-2  by pressing function key  or , the symbol is highlighted in colours
- Press function key **OK**

The display shows menu 7-4-2 "Diagnostics Auxiliary Functions".

When activating a function on the joystick, only the assigned symbol will appear in the display. The function itself is not performed.

- Pressing the function key **ESC** closes the called up menu
- Pressing the function key **ESC** and holding it down brings up the basic screen

KRONE ISOBUS Terminal

10.14 Alarm messages

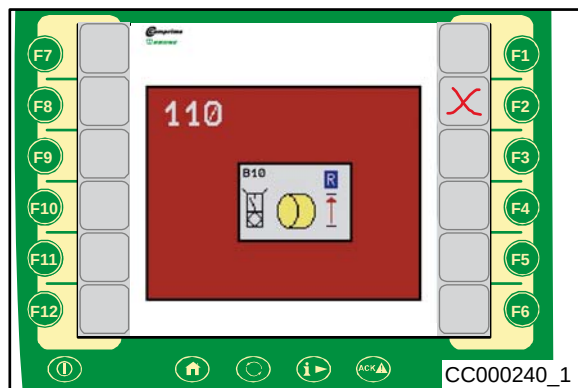


Fig. 164

Alarm message

If a fault occurs on the machine, an alarm message appears in the display and an acoustic signal sounds at the same time (continuous horn). Descriptions of the faults, their possible causes and how to resolve them are described in the "Alarm messages" chapter.



Note

All functions in the menu that is covered over are still active. The softkeys that are covered by the alarm message are disabled.

To reset the alarm:

- Briefly press the  function button; the alarm is reset and the acoustic signal is stopped. If the fault occurs again, the alarm message will appear again.

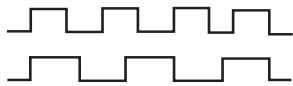
To delete an alarm:

- Hold down the  button for the  softkey for 5 seconds; the acoustic signal stops immediately and the alarm is deleted.

If the fault occurs again, no alarm message will appear. The alarm message does not appear when the fault occurs until after the control unit is turned off and back on.

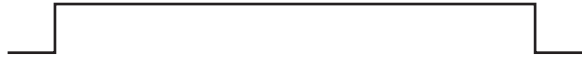


10.14.1 Acoustic warnings



Wrapping is triggered

Filling reached, pre-signal reached,
wrapping complete, bale chamber closed



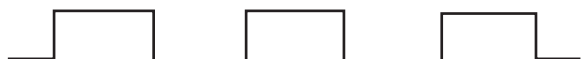
Continuous tone



Rapid interval



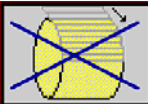
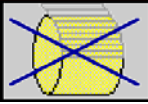
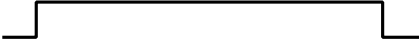
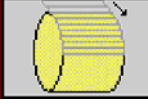
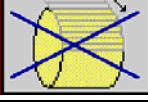
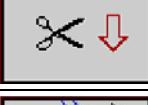
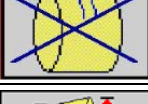
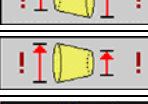
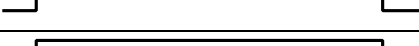
Medium interval



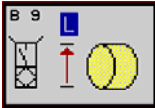
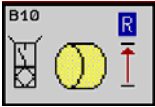
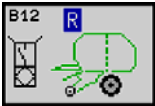
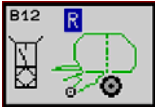
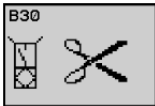
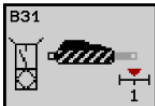
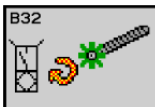
Long interval

KRONE ISOBUS Terminal

10.14.2 Note and messages

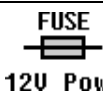
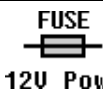
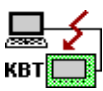
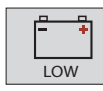
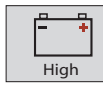
No.	Symbol	Acoustic signal	Description
2			The maximum filling has been reached
5			Net has not been trailed
6			Net stopped
7			Net runs
8			Error while inserting the net
9			No net separation done
10			Bale chamber not closed
14			Blade bottom
23			Twine has not been trailed
24			Filling problem – left too small
25			Filling problem – right too small
26			Twine is not trailed
27			Twine runs
29			No cutting of twine in progress

10.14.3 Physical messages

No.	Symbol	Acoustic signal	Description
109			Sensor for "bale diameter left" defective (Fortima V) Sensor for "bale firmness left" defective (Fortima F)
110			Sensor for "bale diameter right" defective (Fortima V) Sensor for "bale firmness right" defective (Fortima F)
111			Sensor for "bale chamber closed left" defective
112			Sensor for "bale chamber closed right" defective
130			Sensor for "blade base control" defective
131			Sensor for "position engine centre" defective
132			Net length sensor defective
133			Sensor for "twine stop" defective

KRONE ISOBUS Terminal

10.14.4 General Messages

No.	Icon	Acoustic signal	Description
A01			Fuse 2 defective (job computer)
A02			Fuse 3 defective (self-repairing)
A03			No connection to control unit
A04			EEPROM faulty
A14			Power supply too low
A15			Power supply too high
A16			Access to protected storage cell 0
A17			Access to protected storage cells 0-

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)

ISOBUS operation

11.1 Mounting ISOBUS Terminal

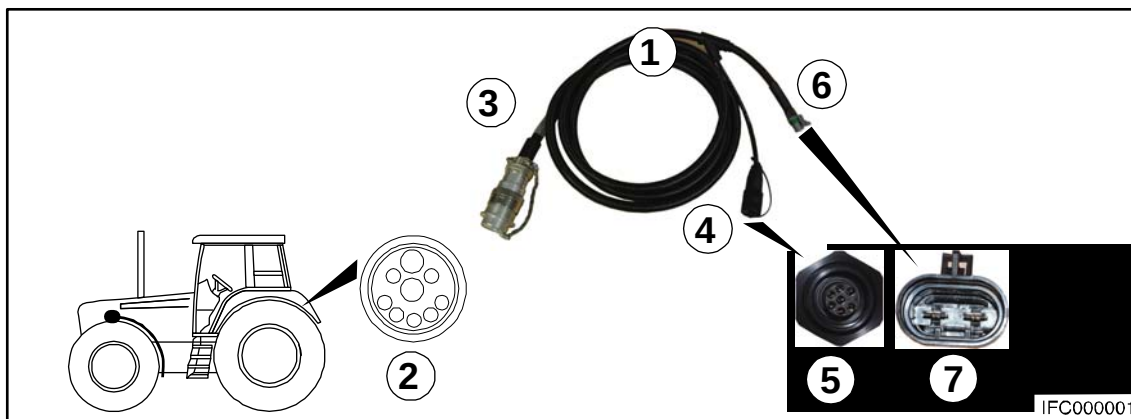


Fig. 165



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.

**Note**

The values for the "bale size", which are set via the scroll wheel for the KRONE ISOBUS - terminal CCI, are carried out at the ISO terminal via the selection key specified by the ISO terminal (refer to the operating instructions of the ISO terminal manufacturer).

**Note**

Menu item 1-4 "Contrast" of the KRONE control cannot be called up on the ISOBUS terminal. A setting is performed directly via the ISOBUS terminal (if applicable) (refer to operating instructions of the ISOBUS terminal manufacturer).

If necessary, acoustic signals must be enabled from the terminal (refer to operating instructions of the ISOBUS terminal manufacturer).

ISOBUS operation

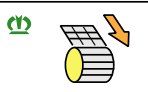
11.3 ISOBUS „Auxiliary“-function (AUX)



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 functions:	Function in loading mode:
Graphic display	
	Insert net



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.

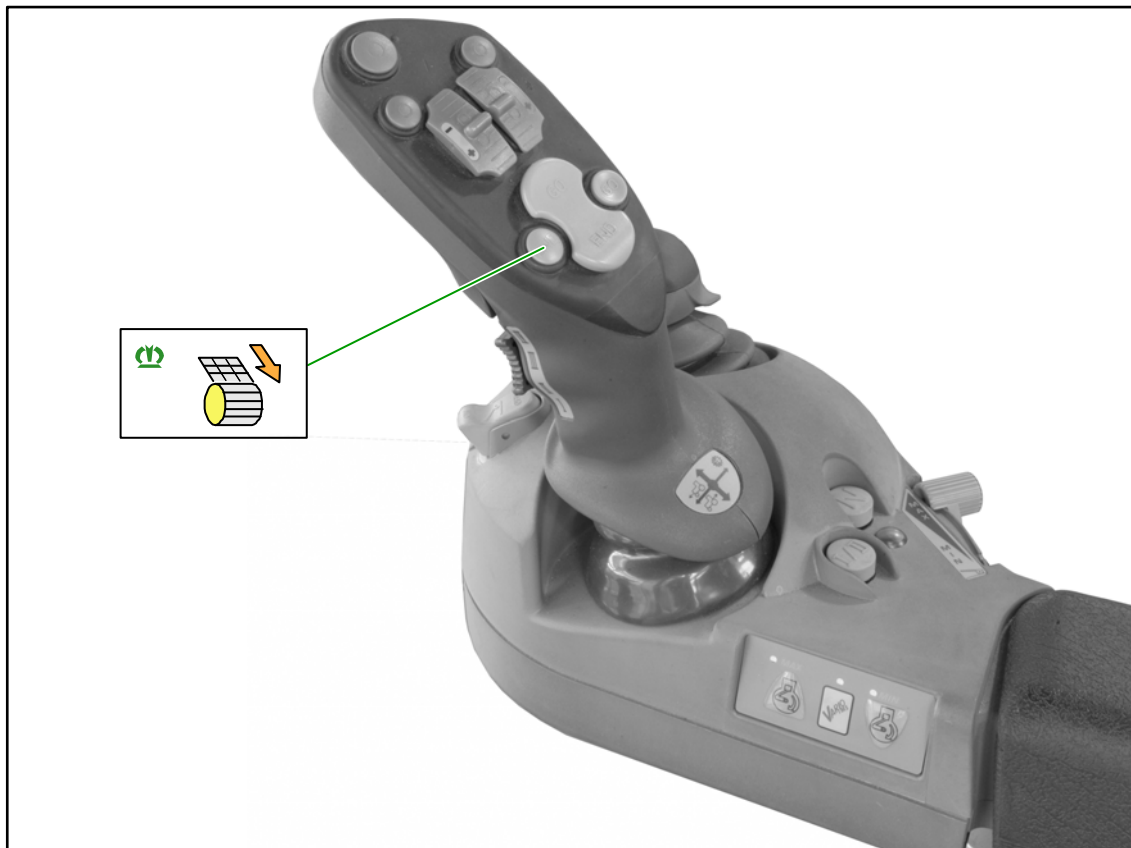


Fig. 166

Driving and Transport

12 Driving and Transport



WARNING!

If the basic safety instructions are not followed, people may be seriously injured or killed.

- To avoid accidents, the basic safety instructions in the chapter Safety must have been read and followed, see chapter Safety "Basic safety instructions".



WARNING!

If the safety routines are not adhered to, people may be seriously injured or killed.

- To avoid accidents, the safety routines in the chapter Safety must be read and followed, see chapter Safety "Safety routines".



WARNING!

There is a risk of accidents if the control valves on the tractor are not locked.

If the control valves are not locked, machine components may be activated unintentionally. This can result in serious accidents.

- To prevent functions being triggered accidentally, the control valves on the tractor must be switched to neutral and locked during road transport journeys.



WARNING!

Danger when cornering with a machine hitched

When cornering, the hitched machine swings out further than the tractor. This can lead to accidents.

- Take the greater swivel range into account.
- When turning, take account of people, oncoming traffic and obstacles.

12.1 Preparations for road travel

The following tasks must be performed on the machine and tractor before road travel:

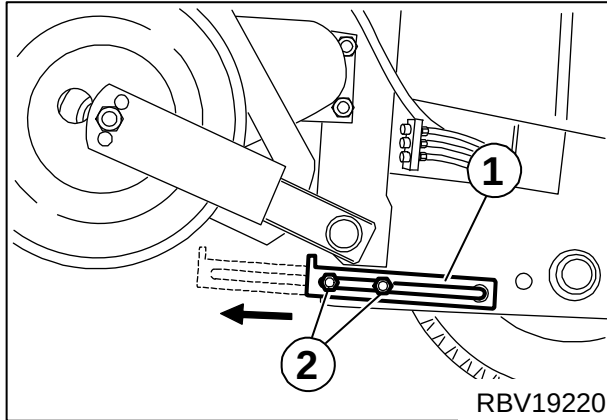
12.1.1 Raise the pick-up

Fig. 167

- Check raised and secured pick-up.
- If necessary secure the pick-up (make the setting on both sides):
 1. Unscrew the nuts (2).
 2. Push the height restriction (1) forward.
 3. Tighten nuts (2).
 4. Switch off the control unit.

Driving and Transport

12.1.2 Checking the parking support

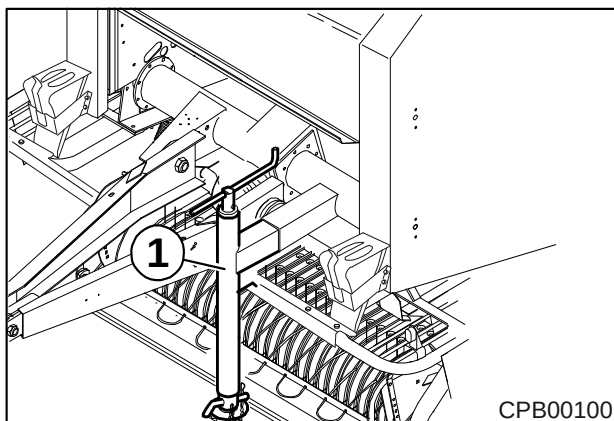


Fig. 168

- Disconnect the electrical power supply to the control unit
- Check that the parking support (1) is in transport position

12.1.3 Checking the lighting system

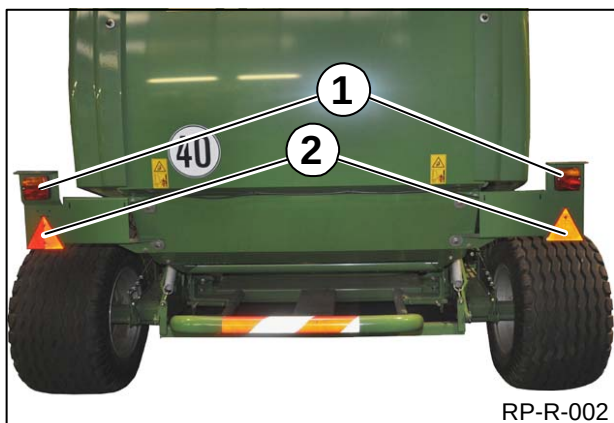


Fig. 169

- Connect the lighting system to the tractor electrical system.
- Check the function of the tail lights (2) and rear reflectors (1) and clean them
- The same applies to the yellow reflectors located on the sides of the machine and the front white side lights

12.2

Parking



DANGER! - Unexpected movements of the machine

Effect: Danger to life, serious injuries

- Make sure that there is no one in the danger zone.
- The machine must only be uncoupled when the engine is switched off and the ignition key is removed.
- Put machine down on level and firm ground. Increase surface of the parking support when putting the machine down on unfortified ground.
- Secure the machine with wheel chocks against the possibility of rolling back before uncoupling it.
- Take care when cranking down the parking support. There is danger of crushing your feet!
- Only remove the universal shaft when the PTO shaft and the engine are switched off and the ignition key is removed.
- Place universal shaft into the support provided.
- The tailgate must only be actuated when the baler is connected properly to the tractor.
- When connecting the hydraulic hose to tractor hydraulics and when disconnecting it from the tractor hydraulics, the system on tractor and machine must be depressurized! Move the appropriate control valves into float position.

12.2.1

Secure the machine against the possibility of rolling back.

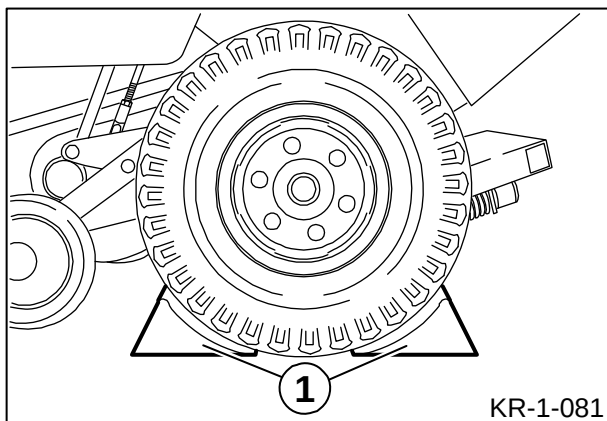


Fig. 170

- Park the machine on firm, level ground.
- Place two wheel chocks (1) under the wheels to prevent the machine from rolling away. The wheel chocks are located in front on both sides of the machine. Always place wheel chocks (1) in front of and behind the tyres. (This will prevent the machine from rolling away).

Driving and Transport

12.2.2 Lowering the parking support

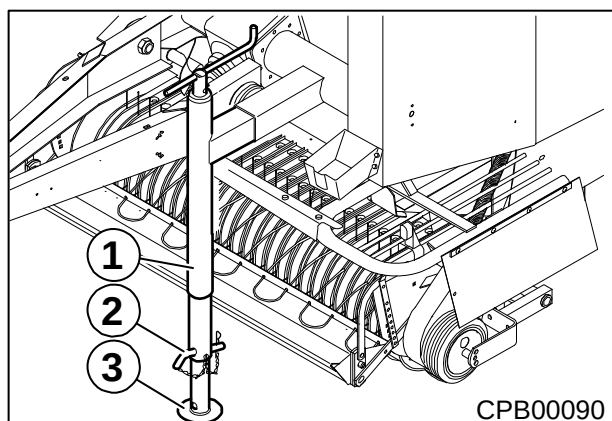


Fig. 171

- Remove stake bolt (2), bring the support pipe out of the parking support (1) and then secure again with the stake bolt (2).
- Crank the support plate (3) tightly onto the ground until pressure on the drawbar has been relieved.

12.2.3 Disconnecting the PTO shaft from the tractor

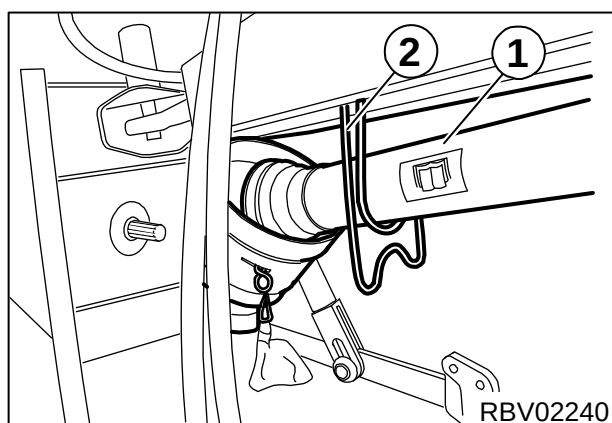


Fig. 172

- Disconnect the PTO shaft (1) on the tractor side.
- Place the PTO shaft (1) inside the PTO shaft support (2).

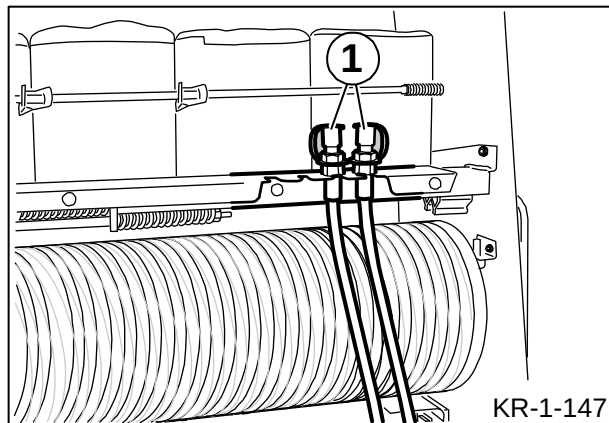
12.2.4 Disconnecting the supply lines

Fig. 173

- Disconnect the hydraulic hoses (1) and electrical connecting cables and store them properly in the corresponding receptacle on the twine box.
- Disengage the hitch coupling or pull the bolt.
- Drive the tractor away slowly.



Driving and Transport

This page has been left blank deliberately!!

13

Operation

**WARNING!**

If the basic safety instructions are not followed, people may be seriously injured or killed.

- To avoid accidents, the basic safety instructions in the chapter Safety must have been read and followed, see chapter Safety "Basic safety instructions".

**WARNING!**

If the safety routines are not adhered to, people may be seriously injured or killed.

- To avoid accidents, the safety routines in the chapter Safety must be read and followed, see chapter Safety "Safety routines".

**Warning!****Risk of injury from uncontrolled movement of round bales**

- On slopes, always lay down round bales in such a way that they cannot move on their own. On account of their weight and their cylindrical shape, they can cause severe accidents if they have once started moving.

Operation

13.1 Settings Before Starting Work

Before starting work, perform or check the following settings for all machine types:

- Working height of the pick-up
- Position of the baffle plate
- Switching on or switching off cutting system (special equipment)
- Cutting length of the cutting system (special equipment)
- Using a bale ejector (special equipment)
- Selecting twine tying or net tying (depending on the design)
- Inserting twine or net (depending on the design)
- Function of chain lubrication, topping up oil, if necessary
- Resetting bale counter

For Fortima V 1500 (MC)/V 1800 (MC), the following settings must be made additionally:

- Tighten the floor conveyor of the bale chamber

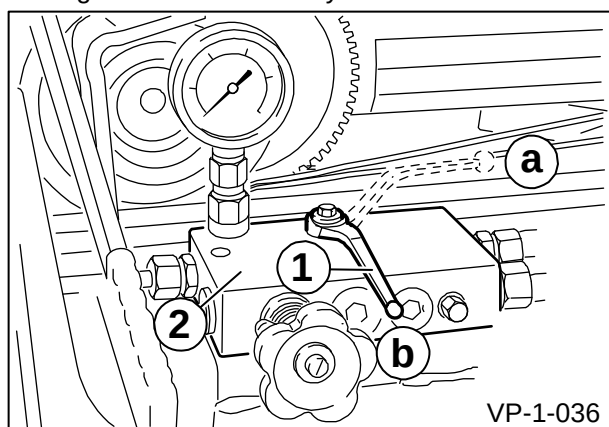


Fig. 174

- Swivel stop cock (1) of control valve (2) from position “a” to position “b”. Lifting tailgate
- Use of additional tappet strips (depending on the crop)
- Preselect bale size

For Fortima V 1250 (MC)/V 1600 (MC), the following settings must be made additionally:

- Preselect bale firmness

The necessary working steps are described in the chapters entitled “Settings” and “Operation”.



If the cutting system is switched on during baling, the bale density will increase substantially, which makes it necessary to reduce the baling pressure.

To do this:

Short, crumbly straw:

- Reduce the number of cutting blades or turn off the cutting system or remove the cutters. The blades can be stored on the right-hand side of the machine.
- Switch off P.T.O. shaft in headland position.

Small, flat swaths:

- Reduce PTO speed

or

- Increase travelling speed

Straw varies greatly in its structure. Even if no cutting system is used, it is not always possible to work with the highest possible pressure. Tappet strips can be installed additionally on Fortima V1500 (MC) and Fortima V1800 (MC) (refer to chapter entitled "Floor Conveyor Chain").

Adapt the round baler setting to prevailing conditions.

13.2 Travelling speed

The forward speed during use depends on the following factors:

- type of crops
- moisture content of the crops
- height of swaths
- ground conditions



Note

The recommended travelling speed is 5 - 12 km/h and must be adapted to local conditions in actual practice.

- Do not overload the round baler.
- When baling a round bale, reduce speed at the start and end of the baling process.

Operation

13.3 Filling the Bale Chamber

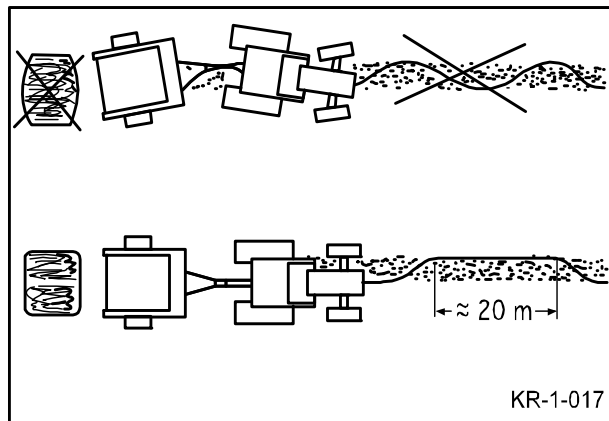


Fig. 175

To attain a consistent bale density inside a round bale, the bale chamber should be filled evenly. The swath width is an important factor here.

It is optimal if the swath has exactly the same width as the bale chamber.

If the swath is wider than this swath width, an exact design of the round bales is not ensured any more. The round bale will be frayed on the sides and difficult to eject from the bale chamber.

If the swath is narrow, the bale chamber can be filled evenly only by driving onto the swath from alternate sides (left/right). However, do not zigzag: drive long distances on the left and right side of the swath as shown in the adjacent illustration. Too frequent changes and uneven filling of the bale chamber will produce barrel-shaped round bales, uneven baling density and higher wear of the floor conveyor chains.

The reached diameter or baling pressure can be read off on the monitor of the operation terminal.



Note

Barrel-shaped round bales can cause damage to the floor conveyor. Distorted and thick round bales are detrimental to proper silage production.



Note

To prevent overload on the round baler when handling certain types of crop (e. g. wet silage), the baling pressure should be reduced. The baling pressure must never be adjusted over 200 bar or over 100 % baling pressure.

Fortima F 1250 (MC) / Fortima F 1600 (MC)



Note

The binding process should be started at the latest when the baling pressure indicators reach the red range (the buzzer sounds if the comfort electronic system is fitted).



Note

To prevent overload on the machine when handling certain types of crop (e.g. wet silage), the binding process should already be started at an earlier point.

Permanent overload of the machine can drastically reduce the service life.

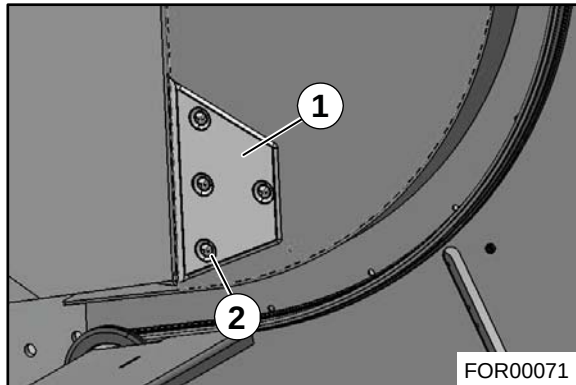
13.3.1 Installing additional discharge plates in the tailgate**Fortima V**

Fig. 176 View of closed bale chamber

If the ready bales do not fall out of the front bale chamber, two discharge plates (1) can be attached to the right and left sides of the machine tailgate.

- Attach the discharge plates (1) to the inside of the bale chamber by screwing the screws (2) into the available holes.

Order the discharge plates (1) with matching screws from the KRONE spare parts warehouse, quoting the following spare parts numbers:

Units	Spare part	Spare parts no.
2	Ejector plate	2754790

Operation

13.4 Wrapping and Depositing Bales

- Start tying or wrapping process (refer to the chapter entitled "Operation"), continue crop collection until tying or wrapping material is transported from crops into the bale chamber and covered from the round bale. To do this, always observe the nominal speed of 540 rpm until tying process is complete.
- Stop the tractor and wait until the tying or the wrapping process has been finished.
- Eject the round bales by opening the bale chamber. Always open the tailgate of Fortima V1500 (MC) and Fortima V1800 (MC) completely, as enough pressure can only be built up for sufficient floor conveyor tension when the cylinders are fully extended.
- Always close the bale chamber of Fortima V1500 (MC) and Fortima V1800 (MC) just with idle speed and start the next baling process.

13.5 After Baling

Fortima V 1500 (MC) / V 1800 (MC)

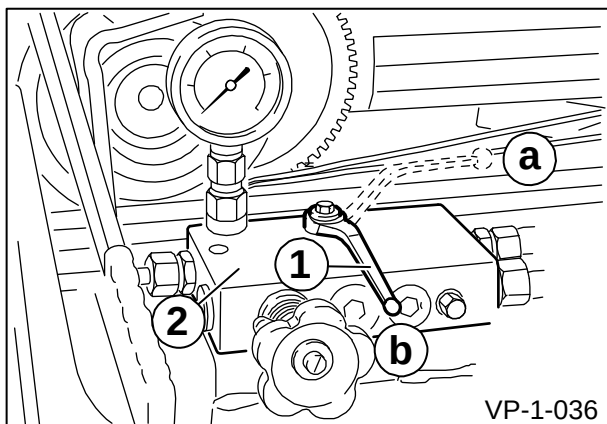


Fig. 177

To relieve the load on the floor conveyor, the tension of the front and the rear floor conveyor must be released when baling work is complete.

- Swivel stop cock (1) of control valve (2) from position "b" to position "a".

The clamping cylinders of the floor conveyors are depressurised.

13.6

Splash guard

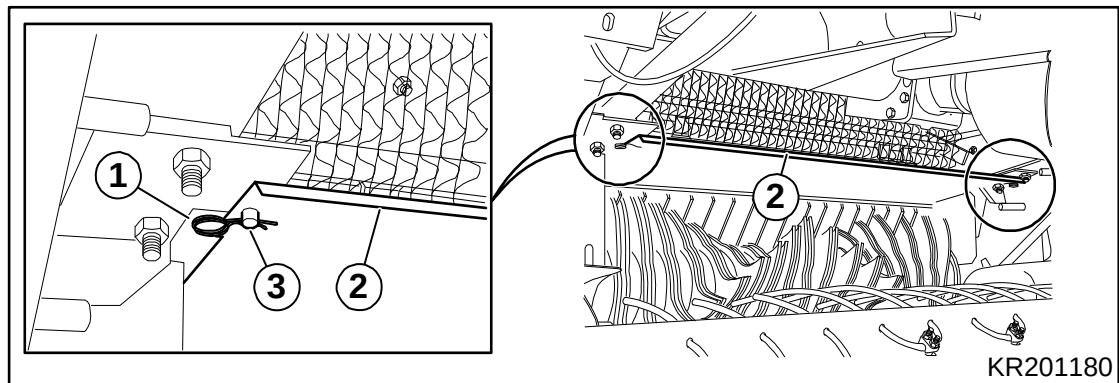


Fig. 178

For use in straw the splash guard should be removed (2).

To do this:

- Remove the spring cotter pin (1) from the attachment bolt (3) (on both sides).
- Remove the splash guard (2).

For use in silage or hay, remount the splash guard (2).

Operation

13.7 Pick-up

13.7.1 Default Setting (Working Height Setting)



Note

Lift the Pick-up for driving in the headland or when driving backward!

- Shut down and safeguard the machine, see chapter Safety -> Safety routines, "Shutting down and safeguarding the machine".

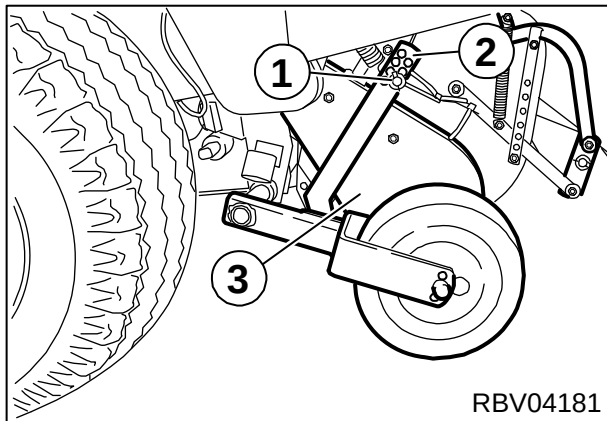


Fig. 179



Note

When adjusting the pick-up, the drawbar height of the machine must be adjusted to the tractor (see chapter "Initial start-up").

The distance from the tines to the ground must be about 20 – 30 mm.
Adjust the pick-up working height according to the prevailing ground conditions.

Default setting (the setting must always be the same on both sides):

- Raise the pick-up (3) hydraulically
- Remove the linch pin (2)
- Set the perforated bar (1) in the required position
- Secure in place using the linch pin (2)

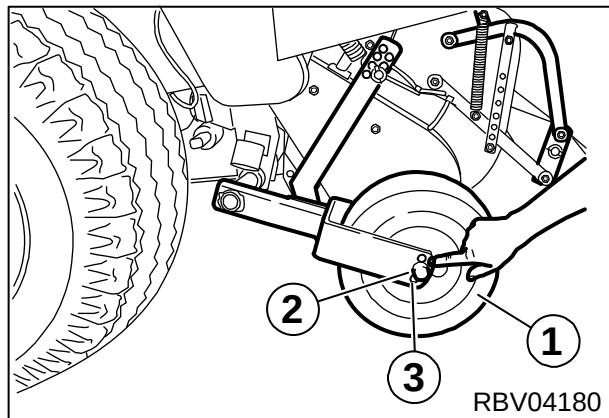


Fig. 180

Additional setting (the setting must always be the same on both sides):

1. Raise the pick-up hydraulically.
2. Unscrew the nut (2).
3. Insert the guide wheel (1) in the new position on the receiving fork (3).
4. Tighten nut (2).

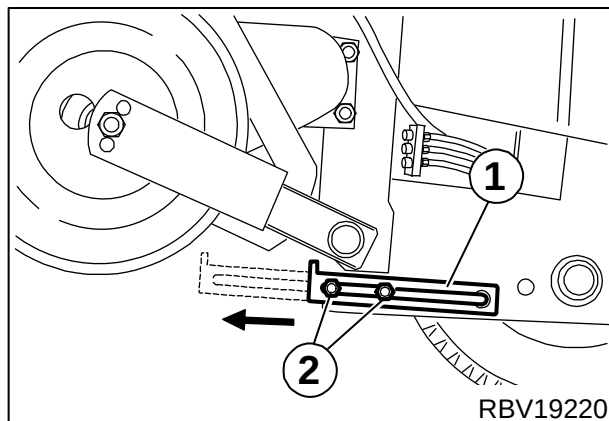


Fig. 181

For extreme soil conditions, regulate the raking height with the depth limiter (setting must be the same on both sides):

1. Raise the pick-up hydraulically.
2. Move the guide wheels (3) up.
3. Unscrew the nuts (2).
4. Push the height restriction (1) forward.
5. Tighten nuts (2).

Operation

13.7.2 Shear Screw for Pick-up Drive

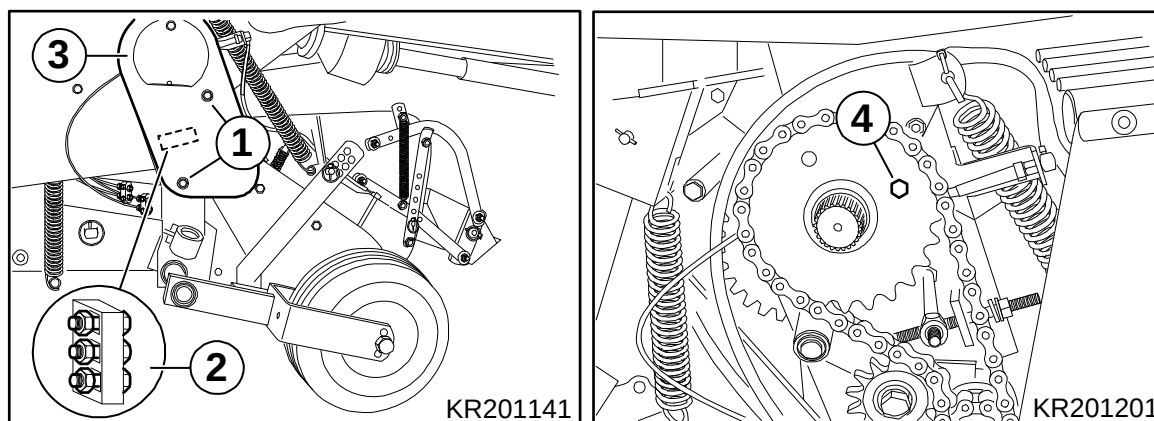


Fig. 182

To protect against overload the pick-up drive and the feed auger drive, which is located behind the guard (3), are secured with a shear screw at the upper chain wheel.

- If a malfunction occurs, dismantle the fastening nuts (1). Remove the protective cover (3).
- Check condition of shear screw (4) and replace if necessary.



Note

There are 3 spare screws (2) on the inside of the protective cover (3) M10 x 35 single-action 24017, DIN 933 8.8 (Order No. 900 638).

- Attach protective cover (3).

13.8 Roller crop guide**WARNING!****Risk of injury if the machine is used without a roller crop guide!**

If the machine is operated without a roller crop guide, people can be seriously injured or killed.

- The roller crop guide is used for accident protection and must not be removed during operation.

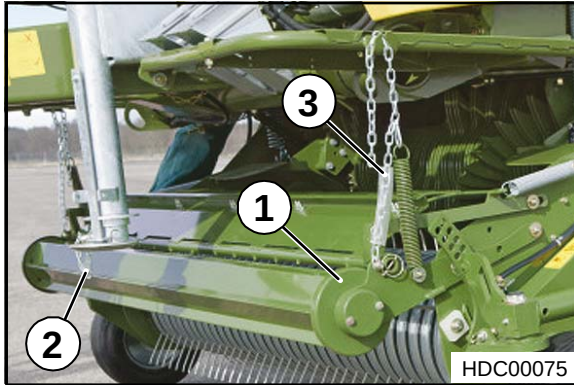


Fig. 183

The roller crop guide (1) makes it possible to regulate how crop is moved. It ensures that the pick-up collects crop evenly.

Adjust the height of the roller crop guide (1) so that the holding-down roller (2) runs continuously above the swath.

Height of the roller crop guide:

For large swaths, the roller crop guide (1) can be adjusted to forage weights.

To do this, hook in the chains (3) correspondingly higher.

**Note**

The setting must be the same on both sides of the roller crop guide.

Operation

13.9 Adjusting the baffle plate

Fortima F 1250 (MC) / F 1600 (MC)

The height of the baffle plate (1) can be adjusted to the swath. Position I is the factory default setting. If the crop is very moist, moving the baffle plate to position II is recommended.

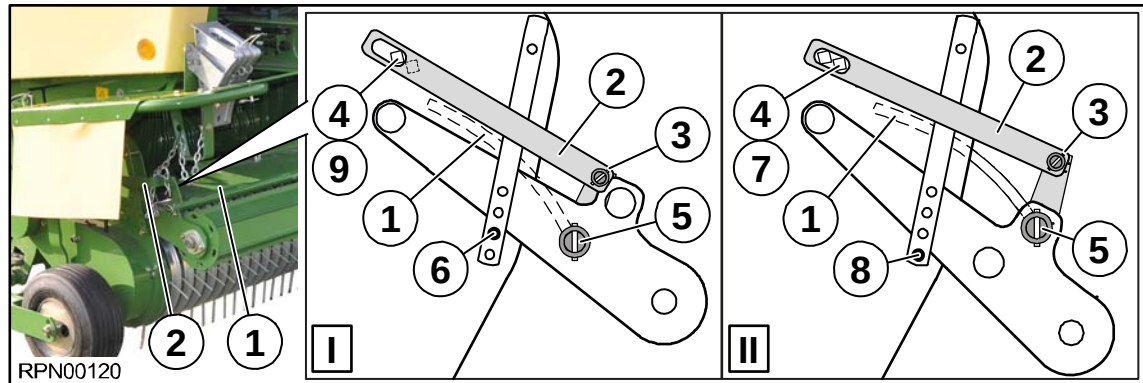


Fig. 184

Moving baffle plate (1) from position I to position II

On the left-hand and right-hand side of the machine

- To dismantle the bar (2),
 - pull out linch pin (3).
 - loosen coach bolt (4).
 - remove bar.
- Pull out linch pin (5).
- Move screw connection (6) one hole deeper.
- Move baffle plate (1) in the upper bore hole and secure with linch pin (5).
- To mount the bar,
 - insert coach bolt (4) into the front rectangular bore hole (7) and fasten with spacer tube, disc and locknut.
 - place the bar onto the bolt (3) and secure with linch pin (3).

Moving baffle plate (1) from position II to position I

On the left-hand and right-hand side of the machine

- To dismantle the bar (2),
 - pull out linch pin (3).
 - loosen coach bolt (4).
 - remove bar.
- Pull out linch pin (5).
- Move screw connection (8) one hole up.
- Move baffle plate (1) into the lower bore hole and secure with linch pin (5).
- To mount the bar,
 - insert coach bolt (4) into the rear rectangular bore hole (9) and fasten with spacer tube, disc and locknut.
 - place the bar onto the bolt (3) and secure with linch pin (3).

13.10 Setting Baling Pressure

Crop	Pressure range (bar)
Hay	low
Straw	medium/high
Silage	high

Fortima V 1500 (MC) / V 1800 (MC)



Note

A pressure range from 50 to 180 bars is prescribed for baling pressure setting.



CAUTION!

If the pressure range is set too high or too low, the machine may be damaged.

- Comply with the stated pressure range between 50 and 180 bars.

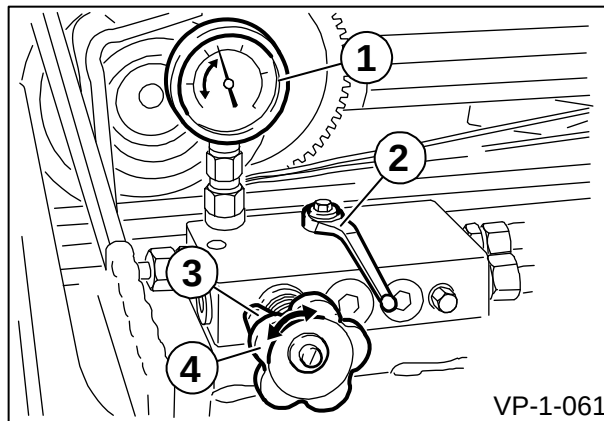


Fig. 185

Relieve the pressure from the clamping cylinders of the floor conveyor after every use.

- Move stop cock (2) to the shown position.
- Loosen anti-twist lock (3).
- Completely screw in handwheel (4) clockwise.
- Completely open the tailgate of round baler.
The hydraulic system of the machine is pressurized. The indicator in the pressure gauge (1) remains at highest pressure.
- Close tailgate.
The tractor hydraulics is placed to "Lower".
- Slowly turn handwheel anticlockwise until the indicator on the pressure gauge (1) shows the desired baling pressure.
- Tighten anti-twist lock (3).

Operation

With medium operation panel version



Fig. 186

The baling pressure is set on the baling pressure display (2) on the right-hand machine side at front and on the wing nut (3) in the twine box.

- Move both baling pressure indicators (1) manually into the desired position. The higher the number, the higher the baling pressure.
- Loosen the wing nut (3) in the twine box.
- Move the screw with wing nut (3) in the oblong hole until the baling pressure warning lights on the operation panel go out and a horn is sounded.
- Tighten the wing nut (3).



13.11 Cutting system

- Shut down and safeguard the machine, see chapter Safety -> Safety routines, "Shutting down and safeguarding the machine".

13.11.1 General Aspects

The machine is equipped with cutting system with cutting rotor and fixed blades. Cutting allows for improved further processing of the round bales and makes it possible to increase the density of baled material. From the tractor, the blades can be swivelled hydraulically out of the conveyor channel if there are any blockages. The single blade locking device prevents the blades from being damaged by foreign objects.

The cutting unit can be switched off mechanically.

Operation

13.11.2 Cutting length

The cutting length is determined by the number of inserted blades.

The number of inserted blades can be read off on the dial (1). In the diagram below 15 blades have been put in.

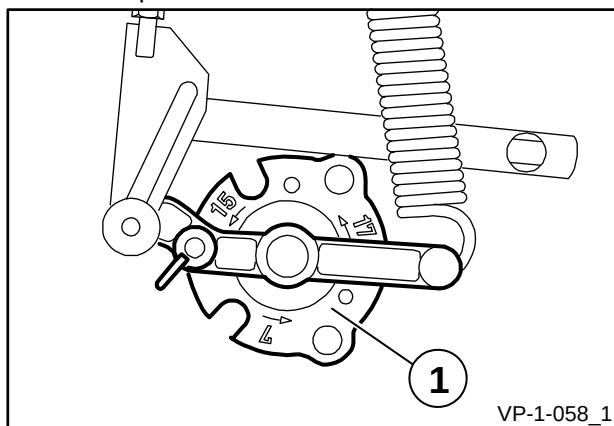


Fig. 187

Table cutting length depending on blade equipping

Cutting length	Number of blades	Setting
	0	"0"
128 mm	7	"7"
64 mm	15*	"15"
64 mm	17	"17"

* The two outer cutters are turned off.

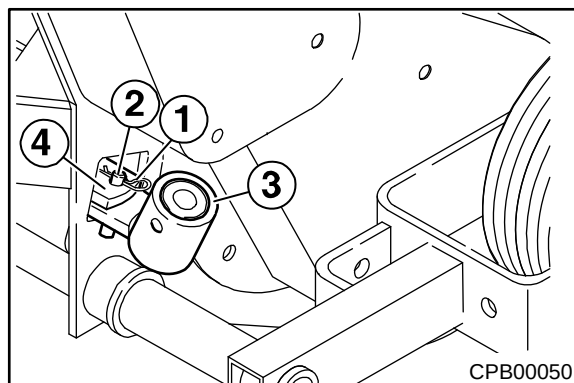


Fig. 188

Setting is carried out via multipurpose keys (3) or (4).

These are located in a support on the right side of the machine.

1. Remove spring cotter pin (1)
2. Pull multipurpose key (3) or (4) off from the retaining bolt (2).

Make setting

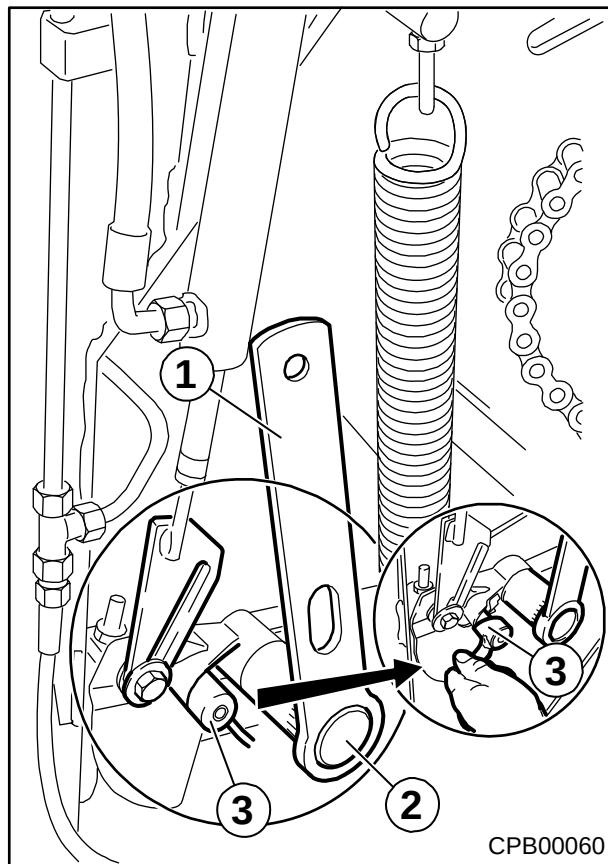


Fig. 189

The setting is performed on the right-hand side of the machine:

1. Turn the locking lever (3) clockwise, unlock blade control shaft.
2. Place multipurpose key (1) on blade control shaft (2).

Operation

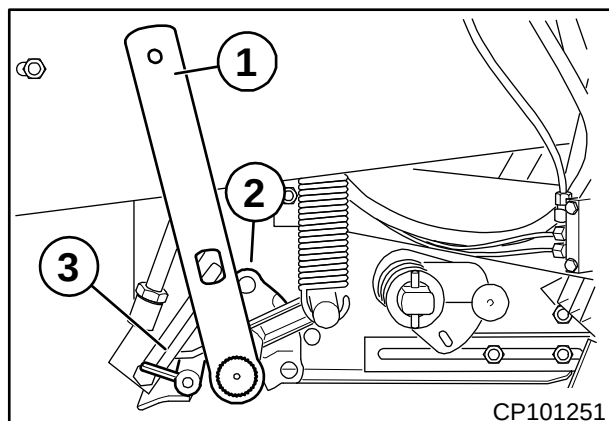


Fig. 190

3. Turn blade control shaft with multipurpose key (1) counter-clockwise into the desired position (2).
4. Turn locking lever (3) counter-clockwise until it engages.



Note

Do not turn locking lever in the other direction (clockwise). In doing so, the possibility exists that the cutters **are not** located in working position.

5. Remove the multipurpose key (1), put it correctly down into transport support and secure it with spring cotter pin.



Note

After adjusting make certain that the cutters are located in working position.

13.11.3 Zero Setting of Blades

Switch off cutters mechanically

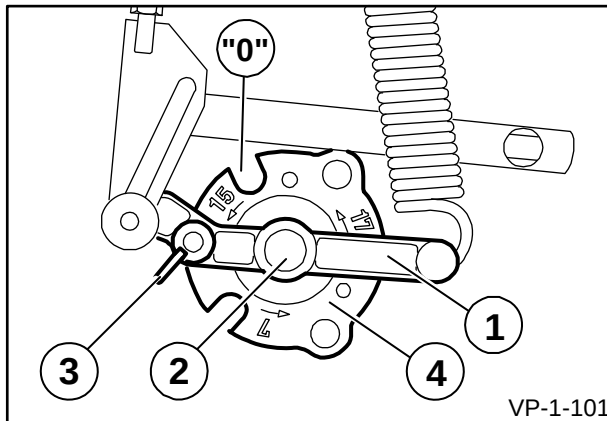


Fig. 191

1. Unlock the locking lever (3).
2. Place multipurpose key (1) on blade control shaft (2).
3. Turn blade control shaft (2) with multipurpose key (1) until selector disc (4) is on position "0". Position „0“ is located respectively between two settings of cutters.
4. Lock blade control shaft (4) with locking lever (3).



Note

If the round baler is to be operated without cutting system for a long period, it is recommended to remove the cutters (see Chapter "Change cutters").

Operation

Switching blades off hydraulically

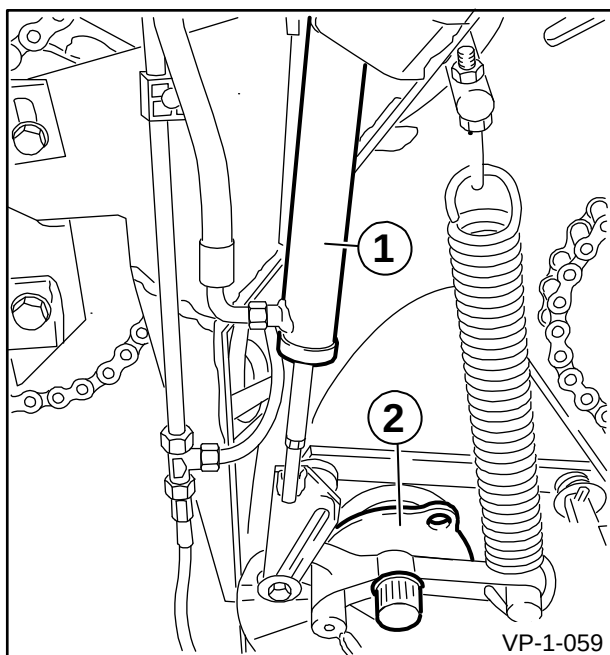


Fig. 192

The hydraulic zero setting of blades switches on:

- manually by operation in the tractor (medium operation panel, Beta operation terminal, ISOBUS terminal, refer to the corresponding chapter) or
- automatically by influence of foreign bodies or blockage.

The cylinder (1) switches the blade control shaft (2) hydraulically into zero setting of blades. Possible blockages or foreign bodies can be removed.

Before switching on the blades again, start the cutting rotor.

13.11.4 Blade Quick-Fit Device

The single blade locking device prevents the blades from being damaged by foreign objects. The single blade locking device is optimally set in the factory.

Should a separate setting be necessary in particular cases (for example for tough crops), the response threshold can be increased or reduced.

This blade setting must be made when the blade control shafts are mounted at bottom.

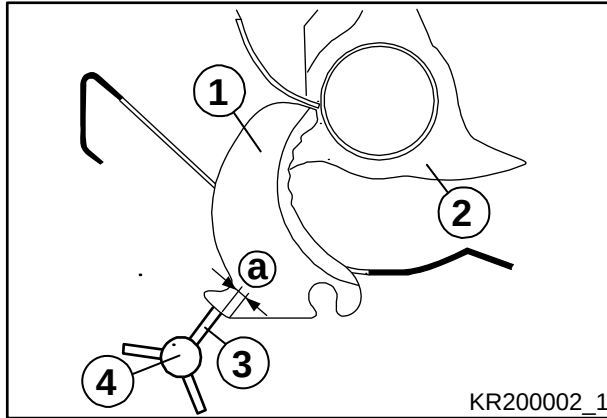


Fig. 193

The protrusion (a) of the edge on the bottom of blade (1) and cam (3) on blade control shaft (4) must be between a = 10 to 14 mm.

Increase dimension a = increase response threshold

Reduce dimension b = response threshold weaker

Operation

Performing the setting of single blade locking device

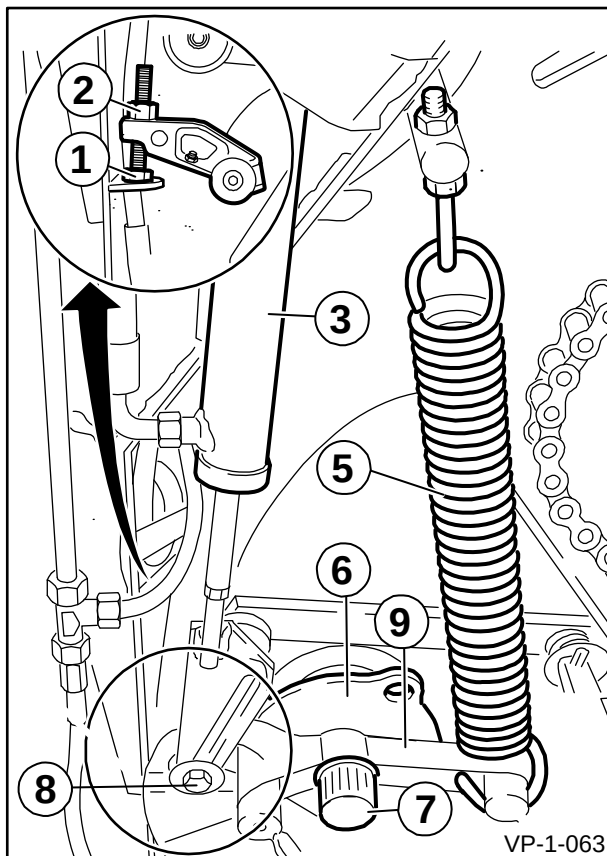


Fig. 194

1. Lower cutting unit.
2. Switch off operation unit and remove the ignition key.
3. Secure the machine against the possibility of rolling back.
4. Loosen counter nut (2).
5. Turn setting screw (1) until the desired dimension is reached.
6. Tighten counter nut (2).

If the setting via setting screw is not possible:

1. Unhinge the spring on the pivoted lever (9).
2. Unscrew the screw (8).
3. Swing cylinder (3) laterally aside.
4. Dismount pivoted lever (9).
5. Remove selector disc (6) from the toothed blade control shaft (7).
6. Slide on selector disc (6) again displaced by one tooth.



Note

Assembly is in reverse order to disassembly.

13.11.5 Adjust blade control shaft

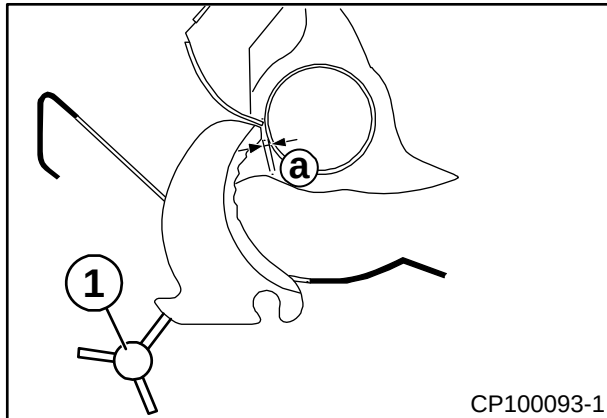


Fig. 195

If the blades are worn, the blade control shaft (1) can be adjusted.



Note

The distance (a) has to be at least 5 mm.

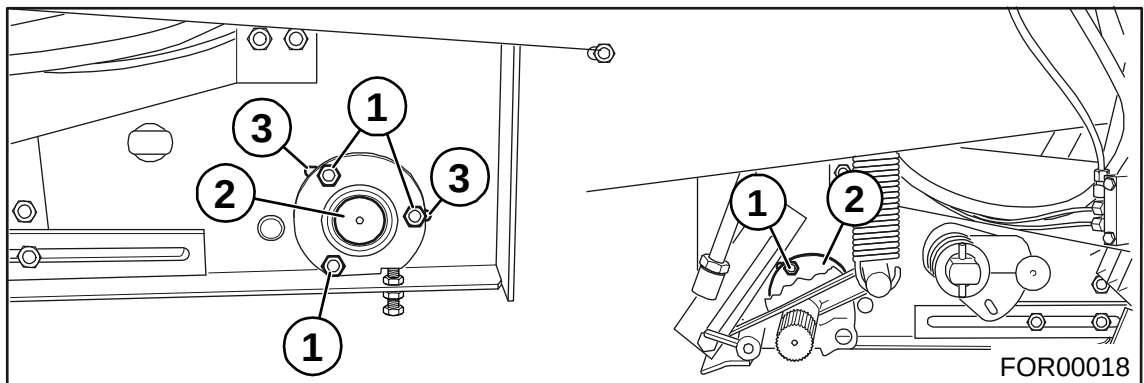


Fig. 196

- Release screws (1) of the bearing housing (3) of the blade control shaft (2) on the left-hand side of the machine
- Release screws (1) of the bearing housing (2) of the blade control shaft on the right-hand side of the machine.

Operation

Make the adjustment of the blade control shaft (1) using the oblong holes:

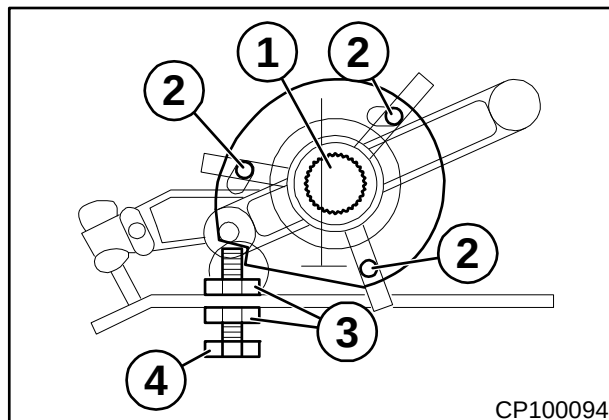


Fig. 197

1. Release counter nuts (3) on both sides and readjust blade control shaft (1) with the adjusting screws (4) to the cutting rotor.
Make the adjustment identical on both sides.
2. On both sides of the machine, tighten fastening bolts (2) of the bearing case.
3. Initialize the blade control shaft again when using **new blades**.

13.11.6 Zero position of the cutter



CAUTION! - Blades fold back!

The blades are pre-tensioned via spring force. Risk of injury!

Never press the blades into working position manually.

- Use a tool, for example a hammer.
- Always wear protective gloves.



Caution! - Risk of injury

Risk of injury on the blade in the blade bar!

- Always wear protective gloves.

The cutting system cutters are accessible from the bale chamber.

- Open tailgate

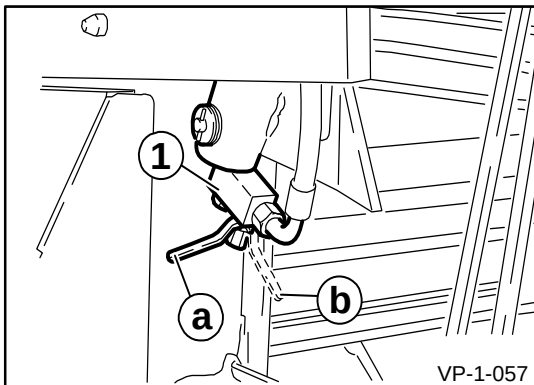


WARNING! – Unintentional closing of the tailgate!

Effect: severe injuries.

- Secure the open tailgate to prevent it from closing unintentionally.

Fortima V1500 (MC)/V1800 (MC)



Fortima F1250 (MC)/F1600 (MC)

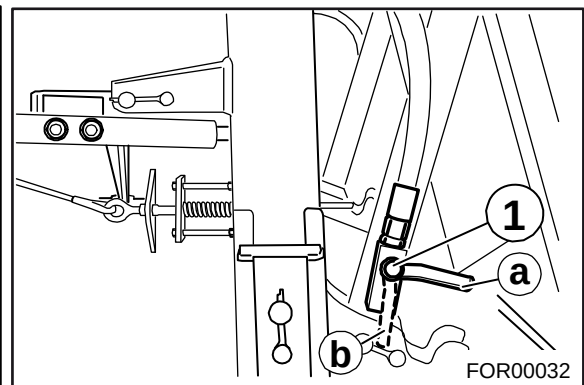


Fig. 198

- Swivel shut-off valve (1) in the return of the left lifting cylinder from position (b) to position (a), the tailgate is locked hydraulically.

Operation

Switch off cutters mechanically

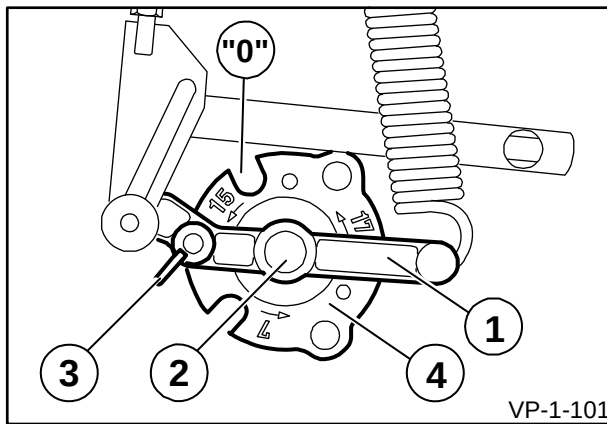


Fig. 199

1. Unlock the locking lever (3).
2. Place multipurpose key (1) on blade control shaft (2).
3. Turn blade control shaft (2) with multipurpose key (1) until selector disc (4) is on position "0". Position „0“ is located respectively between two settings of cutters.

Unlocking the Blade Shaft

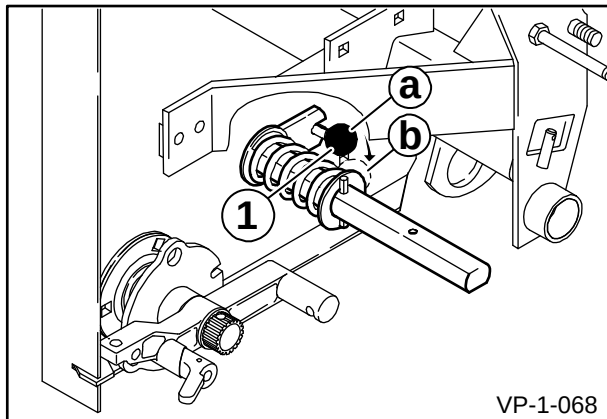


Fig. 200

- Pull the locking bolt out of the locking by pulling the button (1) and swivel it in position (b).

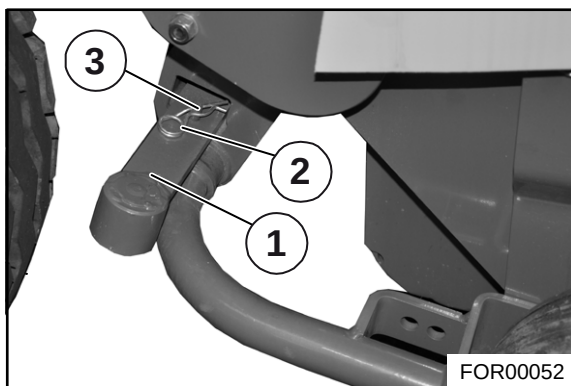


Fig. 201

The supplied key (1) can also be used for locking/unlocking the blade shaft. It is stored right front behind the pick-up.

Pull the cotter pin (2) out off the bolt (3) to remove the key (1). After complete work, attach key (1) to bolt (3) again and secure with cotter pin (2).

Operation

Changing Blades

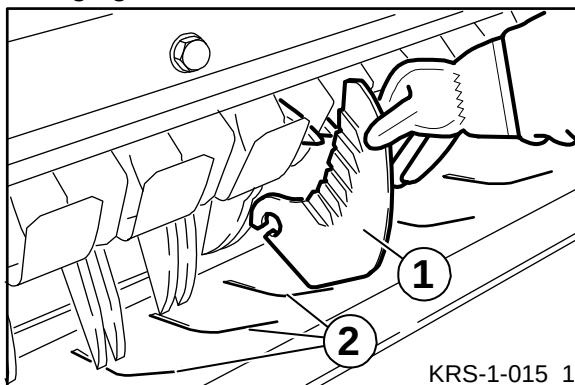


Abb. 202

- Remove the blades (1)



Note

When inserting the blades (1), ensure that they are located correctly on the blade shaft and centred in the slot (2).

- Insert a new or a ground blade (1)



Note

Before the cutter base is raised, check if all blades (1) form a straight line and if they are thus correctly installed.

3. Secure blade shaft and lock it.

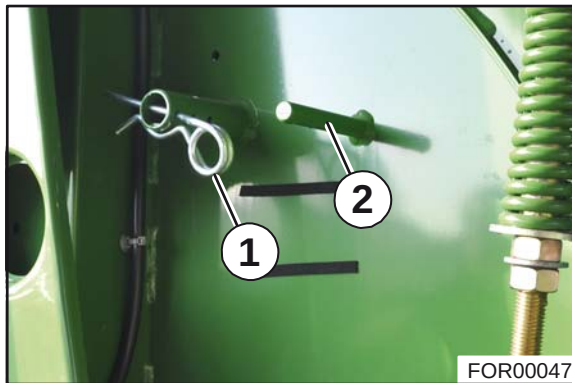
Storage of the Replacement Blades

Fig. 203

The replacement blades are stored on the right machine side under the side guard.

1. For removing the blades, pull the spring clip (1) and remove the required number of blades from the support (2).
2. Secure the remaining blades on the support (2) again with the spring clip (1).

**Note**

Always secure the blades with the spring clip (1) as it may otherwise be possible that a blade is lost.

Operation

13.12 Removing the Crop Blockages in the Crop Collection Area



WARNING! – Unexpected movements of the machine!

Effect: Injuries or damage to the machine

- Eliminate blockages only when the machine is stopped. Switch off the engine and remove the ignition key.
- Start up the machine only when all safety devices are mounted and in proper working order.



CAUTION! - Sharp parts

Effect: severe risk of injury

Always wear protective gloves when removing blockages.



Fig. 204

Crop blockages can occur in the following areas:

- Depending on the machine configuration:
 - (1) Under the feed rotor or under the cutting rotor
 - (2) at the pick-up.



Note

If there is a crop blockage under the feed rotor or under the cutting rotor, also check the pick-up for a possible crop blockage.

13.12.1 Crop blockage under feed rotor/cutting rotor

Depending on How the Machine is Fitted

Proceed as follows to remove the accumulated crop:

Feed rotor

- Turn off the PTO shaft.
- Drive backwards.
- Raise the pick-up.
- Engage the PTO shaft and test whether the blockage clears while idling.

If the blockage is not removed due to this:

- Depending on the machine configuration, reverse manually or hydraulically, see chapter on "Reversing".

If the blockage is not removed due to this:

- Switch off the PTO shaft and the engine of the tractor.
- Remove the ignition key.
- Remove the accumulated crop manually.

If the blockage is not removed due to this:

- Start the tractor engine.
- Switch on the PTO shaft.
- Open the bale chamber using the tractor hydraulics.
- Switch off the PTO shaft and the engine of the tractor.
- Remove the ignition key.

Fortima V1500 (MC)/V1800 (MC)

Fortima F1250 (MC)/F1600 (MC)

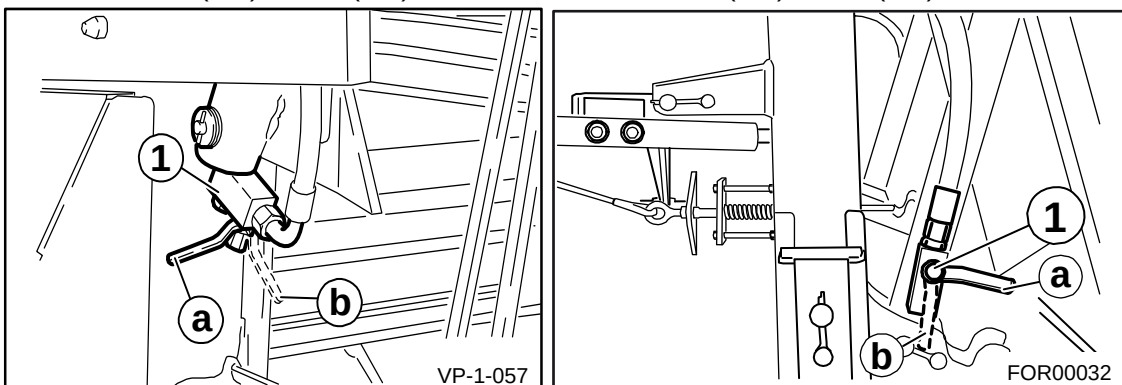


Fig. 205

- Swivel shut-off valve (1) in the return of the left lifting cylinder from position (b) to position (a), the tailgate is locked hydraulically.
- Remove the bale from the bale chamber (roll it out to the swath, if necessary).
- Remove accumulated crop manually.
- Swivel stop cock (1) of left lifting cylinder from position (a) to position (b). The tailgate is unlocked hydraulically.
- Start the tractor engine.
- Switch on the PTO shaft.
- Start the engine of the tractor.
- Open the bale chamber via tractor hydraulics.
- Activate the PTO shaft.

Operation

Cutting rotor

- Turn off the PTO shaft.
- Drive backwards.
- Raise the pick-up.
- Engage the PTO shaft and test whether the blockage clears while idling.

If the blockage is not removed due to this:

- Turn off the PTO shaft.
- Hydraulically lower the blade base.

If the blockage is not removed due to this:

- Also move the blades to zero position.

a) For version with manual blade control system

- Switch off the PTO shaft and the engine of the tractor.
- Remove the ignition key.
- Move the blade control shafts to the blade zero position (setting A/B: -/-) see "Changing the blade" chapter.

b) For version with hydraulic blade control system

- Turn off the PTO shaft.
- Hydraulically lower the blade base.
- Engage the PTO shaft and test whether the blockage clears while idling.

If the blockage is not removed due to this:

- Switch off the PTO shaft and the engine of the tractor.
- Remove the ignition key.
- Remove the accumulated crop manually.

If the blockage is not removed due to this:

- Start the tractor engine.
- Switch on the PTO shaft.
- Open the bale chamber using the tractor hydraulics.
- Switch off the PTO shaft and the engine of the tractor.
- Remove the ignition key.

Fortima V1500 (MC)/V1800 (MC)

Fortima F1250 (MC)/F1600 (MC)

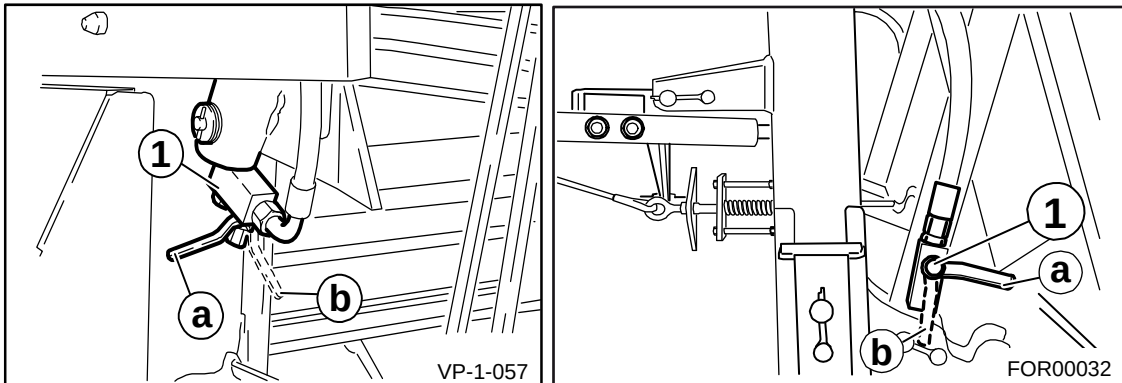


Fig. 206

- Swivel shut-off valve (1) in the return of the left lifting cylinder from position (b) to position (a), the tailgate is locked hydraulically.
- Remove the bale from the bale chamber (roll it out to the swath, if necessary).
- Remove accumulated crop manually.
- Swivel stop cock (1) of left lifting cylinder from position (a) to position (b). The tailgate is unlocked hydraulically.
- Start the tractor engine.
- Switch on the PTO shaft.
- Start the engine of the tractor.
- Open the bale chamber via tractor hydraulics.
- Activate the PTO shaft.

Operation

13.12.2 Crop blockage at pick-up

Proceed as follows to remove the accumulated crop:

a) If crop accumulates on the right/left edge of the pick-up

- When the PTO shaft is running, drive backward. In doing so, lift/lower the pick-up several times.

If the blockage is not removed due to this:

- Switch off the PTO shaft and the engine of the tractor.
- Remove the ignition key.
- Remove the accumulated crop manually.

b) In case of a crop blockage of the pick-up

- When the PTO shaft is running, drive backward. In doing so, lift/lower the pick-up several times.

If the blockage is not removed due to this:

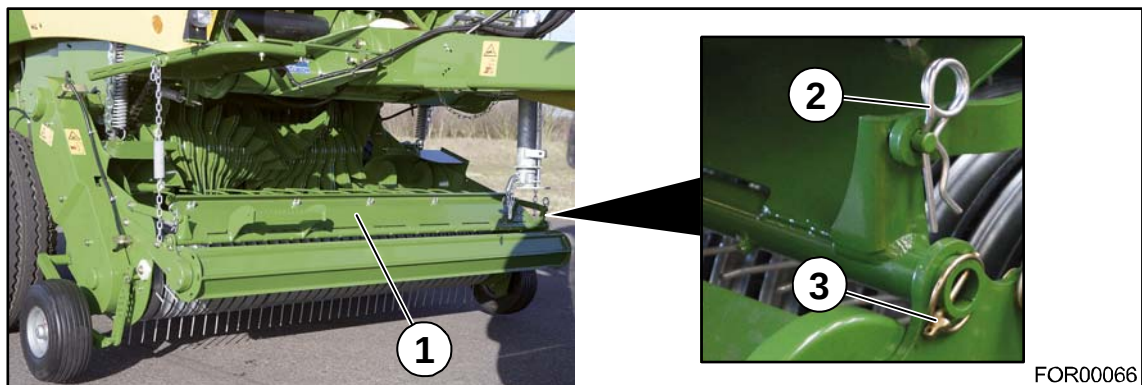


Fig. 207

- Switch off the PTO shaft and the engine of the tractor.
- Remove the ignition key.
- Remove the baffle plate (1):
 - Loosen the spring cotter pin (2) and the linch pin (3) on the right and left.
 - Remove the baffle plate.
 - Manually remove the accumulated crop.
 - Secure the baffle plate on the right and left with the linch pin and spring cotter pin.

13.13
Reversing

(feed rotor produced from 2013 onwards)


WARNING! – Unexpected movements of the machine!

Effect: Injuries or damage to the machine

- Eliminate blockages only when the machine is stopped. Switch off the engine and remove the ignition key.
- Start up the machine only when all safety devices are mounted and in proper working order.

a) For version with manual reversing device

- Switch off the PTO shaft and the engine of the tractor.
- Remove the ignition key.

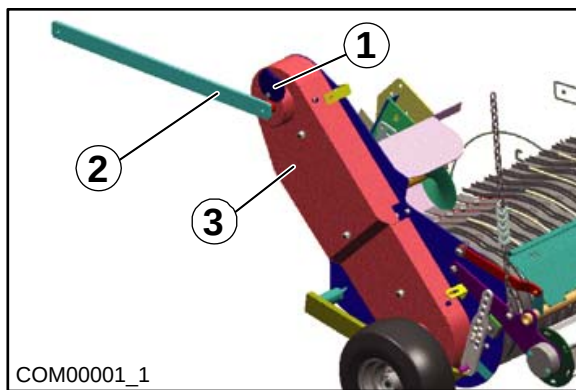


Fig. 208

- Move the cover (1) to the side.
- Remove the actuating lever (2) from the twine box and attach to the drive shaft for the pick-up (3) on the right-hand side of the machine.
- Manually turn back the feed rotor with the actuating lever.
- Reset the machine and manually remove any remaining crops from the feed rotor or the pick-up.


WARNING! - Actuating lever on drive shaft when restarting machine!

Risk of death or serious injuries, significant property damage.

- Detach actuating lever and place in twine box before restarting the machine.

- Remove the actuating lever (2) and place in the twine box.
- Close the cover (1).

Operation

b) For version with hydraulic reversing device

- Turn off the PTO shaft.
- Wait until all machine parts are stationary.
- Open the stop cock in the control valve hydraulic hose.
- Apply pressure to the hydraulic cylinder; the cylinder extends.
Depressurise the hydraulic cylinder; the cylinder retracts.
- Repeat this operation around 4-5 times to turn back the feed rotor by around $\frac{1}{4}$ turn.
- Reset the machine.
- Turn off the tractor engine and remove the ignition key.
- Manually remove any remaining crops from the feed rotor or the pick-up.
- Depressurise the hydraulic cylinder.
- Check that the reversing device is in idle position.
- Close the stop cock in the control valve hydraulic hose.
- Start the engine and turn on the PTO shaft.

13.14 Assembly and disassembly of the bale ejector



WARNING! – Maintenance, assembly, repair and adjustment work as well as troubleshooting and fault clearance

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

The following general rules apply to all maintenance, assembly, repair and adjustment work as well as for troubleshooting and fault clearance:

- Switch off PTO shaft and engine, remove the ignition key and carry it with you.
- Secure the machine against rolling by using wheel chocks.
- During the operation, maintain an adequate safety distance from all movable parts of the machine. This applies especially to the collecting mechanism (pick-up) of the crop.
- Before starting assembly work, it is absolutely necessary to move stop cock on the left lifting cylinder of the tailgate into locking position so that assembly work can be carried out when the tailgate is open.

Fortima F 1250 (MC) / F 1600 (MC)

Under some working conditions, e. g. on slopes, it is advisable to dismount the bale ejector (3).



Caution! – Bale ejector moves upward!

Risk of injury

- When carrying out assembly or disassembly work, do not stay in the area above the bale ejector.

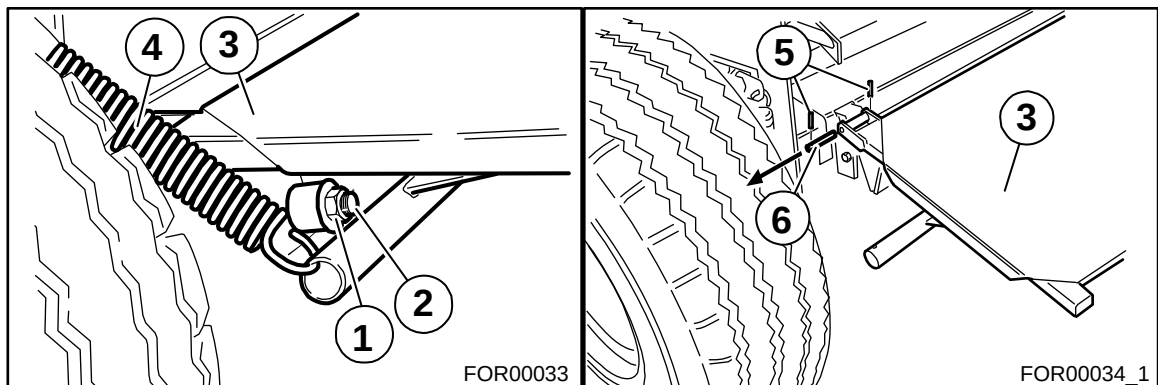


Fig. 209

1. Unscrew the nuts (1) on both sides from the threaded rod (2).
2. Lift bale ejector (3) upward and unhook the springs (4) right and left.
3. Remove roll pins (5) on both sides and pull out bolts (6).
4. Dismount bale ejector (3) to the rear.

Assembly of bale ejector (3) is in reverse order to the removal procedure.

Operation

Fortima V 1500 (MC) / V 1800 (MC)



DANGER! – Crush hazard!

Effect: Injuries to persons.

- Use suitable means to move the bale ejector (weight about 40 kg). Do not walk under the bale ejector.

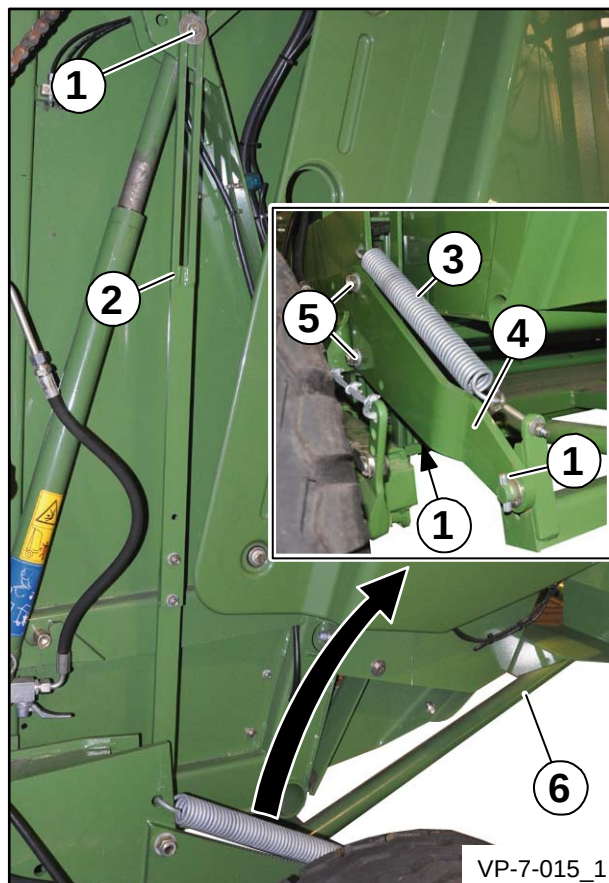


Fig. 210

Under some working conditions, for example on slopes, it is advisable to remove the bale ejector (6).

To do this:

1. Open the front protective covers on the left and right-hand side of the machine.
2. Remove the clamping sleeves (1) on both sides of the support (2) and the bale ejector support (4).
3. Remove the spring (3) and screws (5) on both sides.
4. Remove the bale ejector towards the back.

For assembly of the bale ejector see chapter "Initial start-up".

13.15 Floor conveyor chain**Fortima V 1500 (MC) / V 1800 (MC)****WARNING! – Maintenance, assembly, repair and adjustment work as well as troubleshooting and fault clearance**

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

The following general rules apply to all maintenance, assembly, repair and adjustment work as well as for troubleshooting and fault clearance:

- Switch off PTO shaft and engine, remove the ignition key and carry it with you.
- Secure the machine against rolling by using wheel chocks.
- During the operation, maintain an adequate safety distance from all movable parts of the machine. This applies especially to the collecting mechanism (pick-up) of the crop.
- Before starting assembly work, it is absolutely necessary to move stop cock on the left lifting cylinder of the tailgate into locking position so that assembly work can be carried out when the tailgate is open.

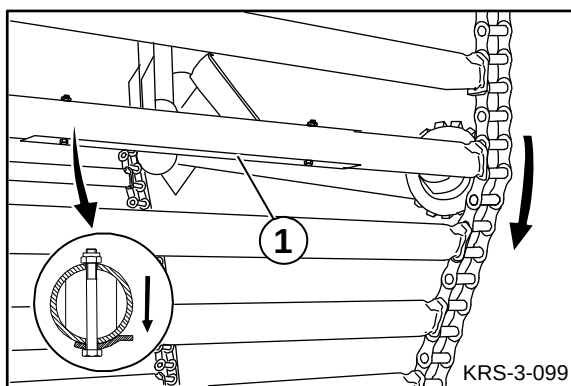


Fig. 211

To ensure immediate bale starting when the crop is very dry and smooth, the front floor conveyor chain can be fitted with additional driver guide rails.

**Note**

Observe running direction of floor conveyor chains!

- Mount driver guide rails (1) on the floor conveyor chain rods pre-drilled for that purpose.

Operation

13.16 Double Twine Tying (Medium Operation Panel)

Fortima F 1250 (MC) / F 1600 (MC)

The machine is equipped with a twine box. This twine box is capable of holding 10 rolls of tying twine.

To ensure sufficient tying safety, make certain that only synthetic twines are used which have a running length of 750- 1000 m/kg.

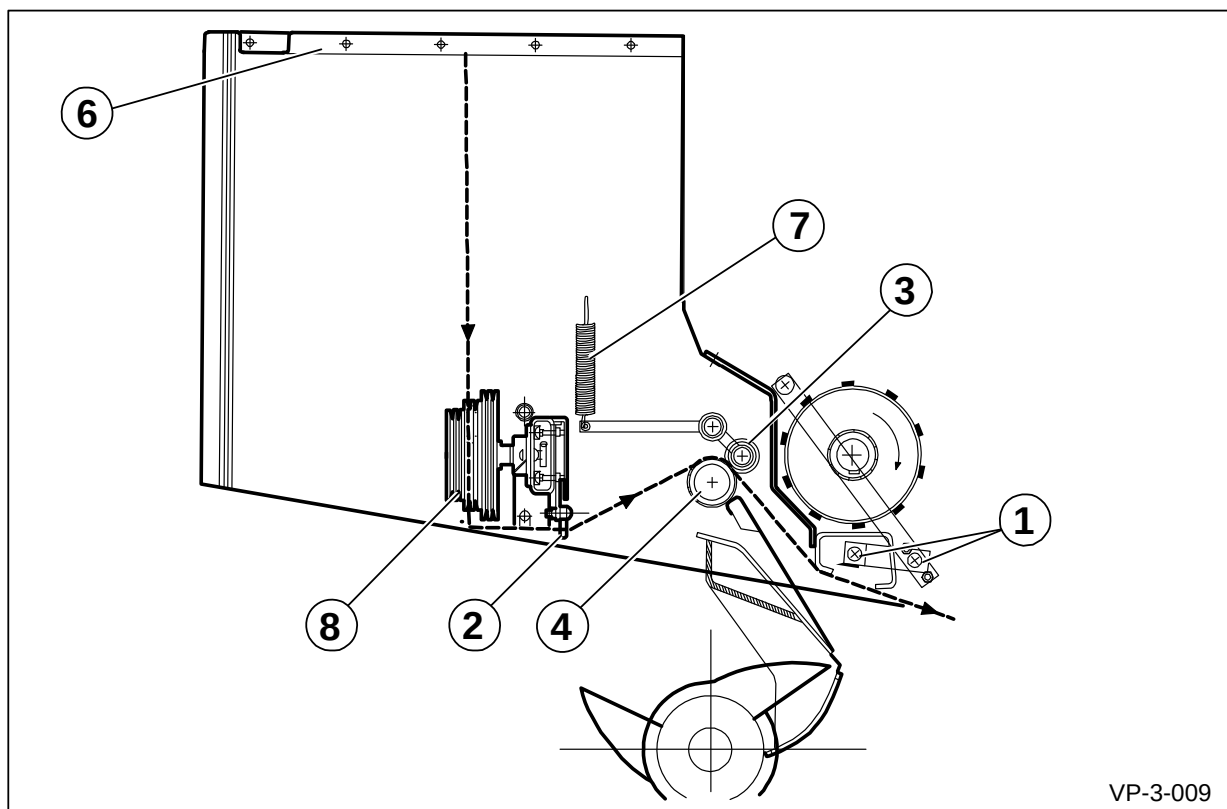


Note

Use only KRONE original tying twine. The tying twine must be ordered via KRONE spare parts department under spare parts number: 00 929 949 0 (750 m/kg) or 00 929 951 0 (1000 m/kg).

13.16.1 Overview

With twine tying version



VP-3-009

Fig. 212

- 1 Blade cassette
- 2 Twine tying
- 3 Pressure roll
- 4 Rubber roll
- 6 Twine box
- 7 Tension spring pressure roll
- 8 Stepped pulley

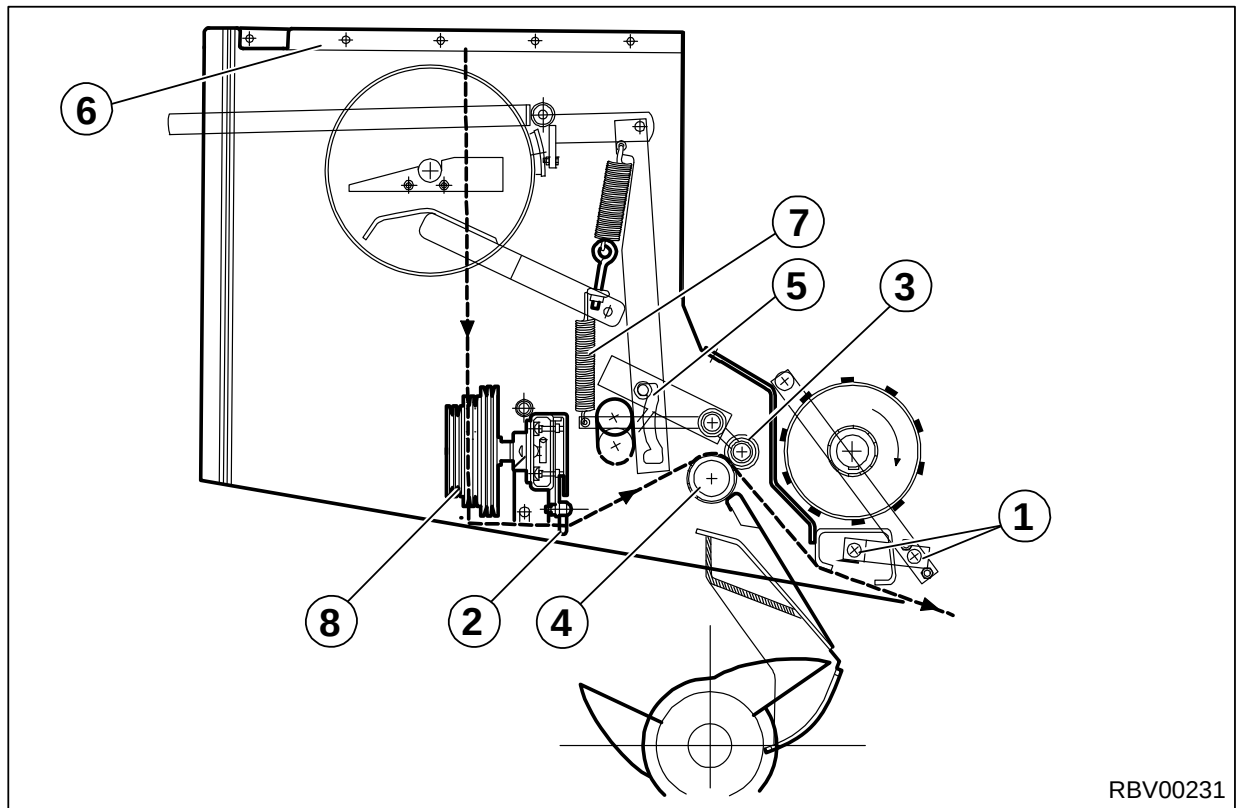
With twine tying and net tying version


Fig. 213

- 1 Blade cassette
- 2 Twine tying
- 3 Pressure roll
- 4 Rubber roll
- 5 Link guidance
- 6 Twine box
- 7 Tension spring pressure roll
- 8 Stepped pulley

13.16.2 Function of Tying

The twine is laid from the twine box (6) through twine eyes and twine brake to the stepped pulley (8). From here, the twine is laid by means of twine tying (2) between rubber roll (4) and pressure roll (3) in the area of the blade cassette (1). When starting wrapping process, the rubber roll (4) is driven and conveys the twine in the area of the conveyor channel and the rotating round bale. The still conveyed crop ensures that the twine is picked up with the round bale.

The twine tying (2) leads a twine from inside to outside and then again to the inside over the round bale. At the same time the twine tying leads the other twine to the outside and then again to the inside over the round bale. A sensor on the twine tying reports that the wrapping process is completed.

The twine is cut off and the wrapping process is completed.

Operation

13.16.3 Setting the tying twine in place



DANGER! - Unexpected movement of a machine component.

Effect: Danger to life, injuries.

- The net may only be inserted by one person.
- Make sure that there is no other person in the movement area of the machine.
- Switch off PTO shaft and engine, remove the ignition key and carry it with you.
- Switch off control unit.



Note

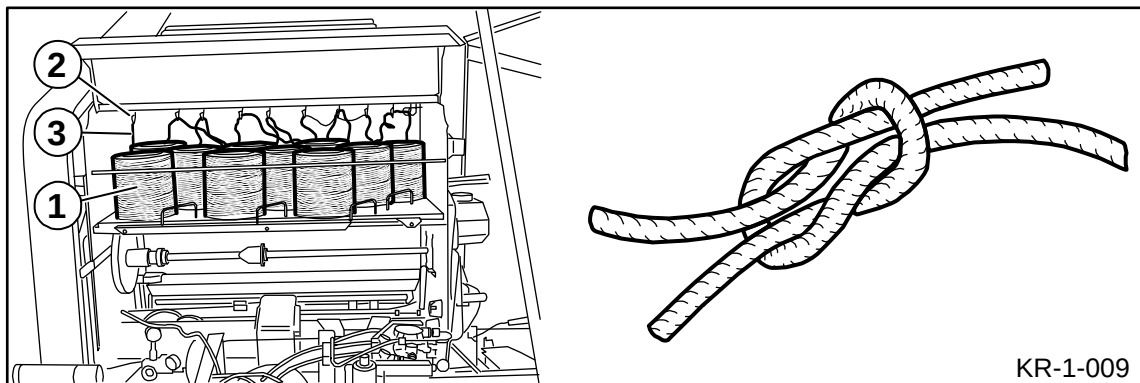
When placing the tying twine in the twine box, make certain that the labeling on the rolls can be read. Make certain the side marked "Up" is facing up.



CAUTION! - Contamination of tying twine and tying mechanism by oil and grease

Effect: Machine damage and problems when unwinding the tying twine

- Twine, twine tensioner and eyes must not be contaminated with oil or grease.
- The parts of twine tying device the tying twine or net passes through must not be soiled with oil or grease.



KR-1-009

Fig. 214

The tying twine must be prepared and inserted when the machine is at standstill.

- Switch off the PTO shaft of the tractor.
- Switch off tractor engine.
- Before knotting the twine rolls (1), pull the twine (3) through the related twine guide (2).
- Knot the twine according to the figure.

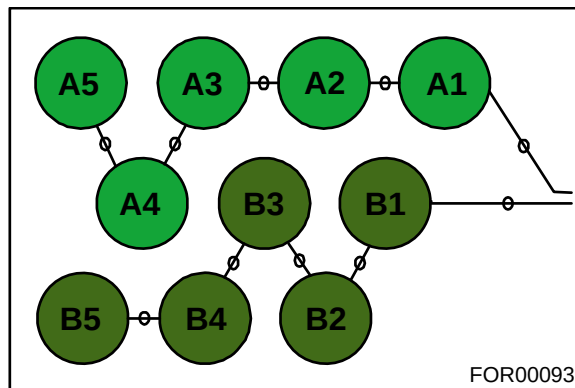


Fig. 215

	the end of twine roll	with the beginning of twine roll
Twine	A1	A2
	A2	A3
	A3	A4
	A4	A5
Twine B	B1	B2
	B2	B3
	B3	B4
	B4	B5

Producing twine A:

- Guide the beginning of the twine of twine roll (A1) through the eye above and through the twine brake out of the twine box.
- Connect the end of the twine of twine roll (A1) through the eye above with the beginning of the twine of twine roll (A2) by means of reef knot.
- Connect the end of the twine of twine roll (A2) through the eye above with the beginning of the twine of twine roll (A3) by means of reef knot.
- Connect the end of the twine of twine roll (A3) through the eye above with the beginning of the twine of twine roll (A4) by means of reef knot.
- Connect the end of the twine of twine roll (A4) through the eye above with the beginning of the twine of twine roll (A5) by means of reef knot.

Producing twine B:

- Guide the beginning of the twine of twine roll (B1) through the eye above and through the twine brake out of the twine box.
- Connect the end of the twine of twine roll (B1) through the eye above with the beginning of the twine of twine roll (B2) by means of reef knot.
- Connect the end of the twine of twine roll (B2) through the eye above with the beginning of the twine of twine roll (B3) by means of reef knot.
- Connect the end of the twine of twine roll (B3) through the eye above with the beginning of the twine of twine roll (B4) by means of reef knot.
- Connect the end of the twine of twine roll (B4) through the eye above with the beginning of the twine of twine roll (B5) by means of reef knot.

Operation

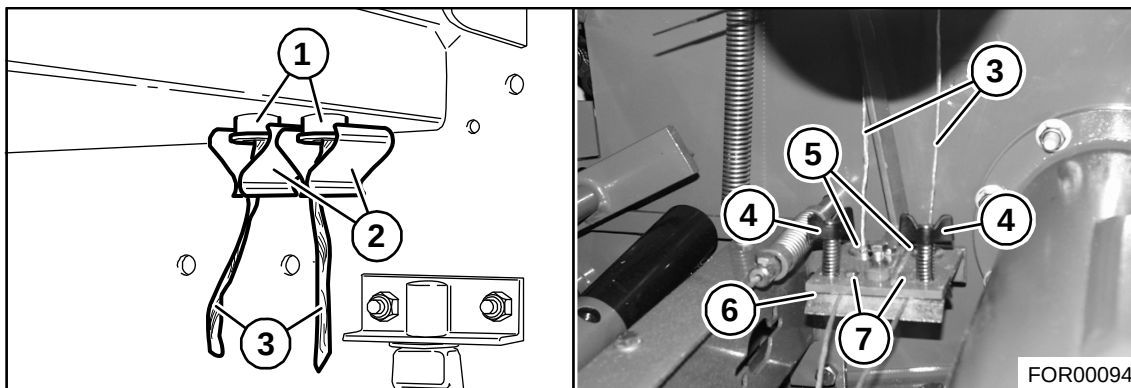


Fig. 216

- Guide the both twines (3) out of the eyes (1) through the twine retainers (2).
- Guide the both twines (3) through the eyes (5) of the twine brake (6).
- Guide the both twines (3) between the spring compressors (4) and the screws (7).

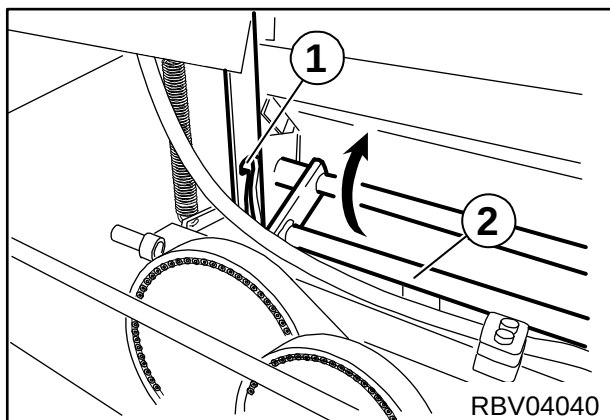


Fig. 217

- In case of net tying and twine tying version, swivel the net spreader (2) into the upper position.
- Ensure that the net spreader (2) is held in the link of guide iron (1).

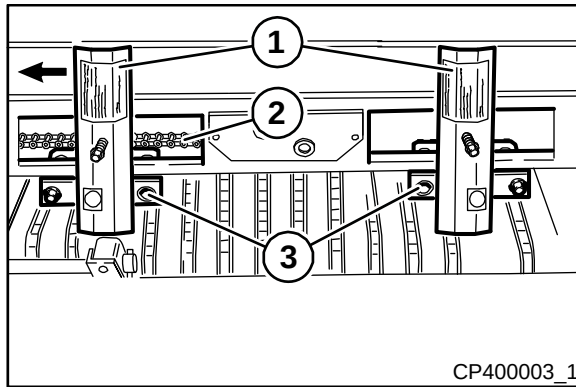


Fig. 218

- Open cleaning valves (1) of twine tying.
- Turn twine tying manually in the working direction on the stepped pulley (direction of arrow).
- Remove dirt in area (2).
- Close cleaning valves.
- Turn stepped pulley into direction of arrow until the twine guide slides (3) move from outside to the middle into initial position (refer to figure).

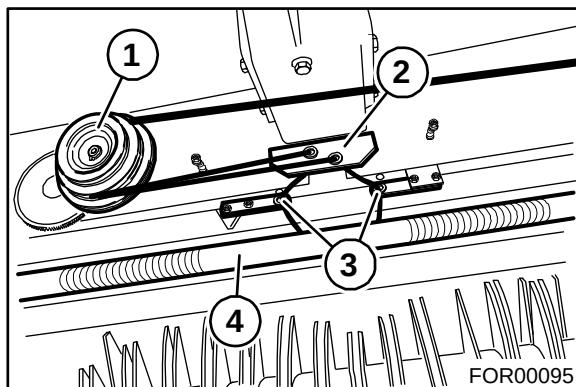


Fig. 219

- Guide the twines coming from the twine brake around the stepped pulley (1), through distributor eyes (2) and then through distributor eyes (3).
- Lay the twine ends at least 40 cm over the rubber roll (4).

Operation

13.17 Quadruple Twine Tying (operation terminal Beta, ISOBUS terminal)

The machine is equipped with a twine box. This twine box is capable of holding 10 rolls of tying twine.

To ensure sufficient tying safety, make certain that only synthetic twines are used which have a running length of 750- 1000 m/kg.

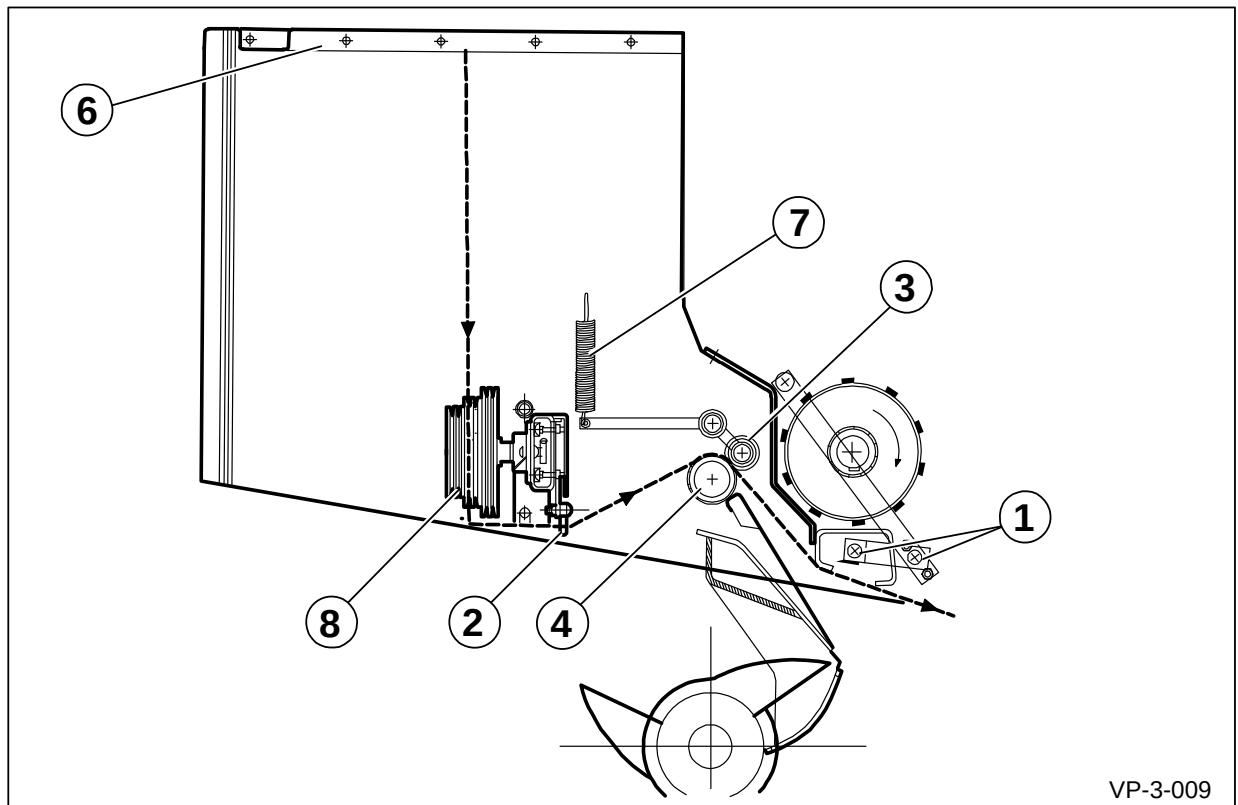


Note

Use only KRONE original tying twine. The tying twine must be ordered via KRONE spare parts department under spare parts number: 00 929 949 0 (750 m/kg) or 00 929 951 0 (1000 m/kg).

13.17.1 Overview

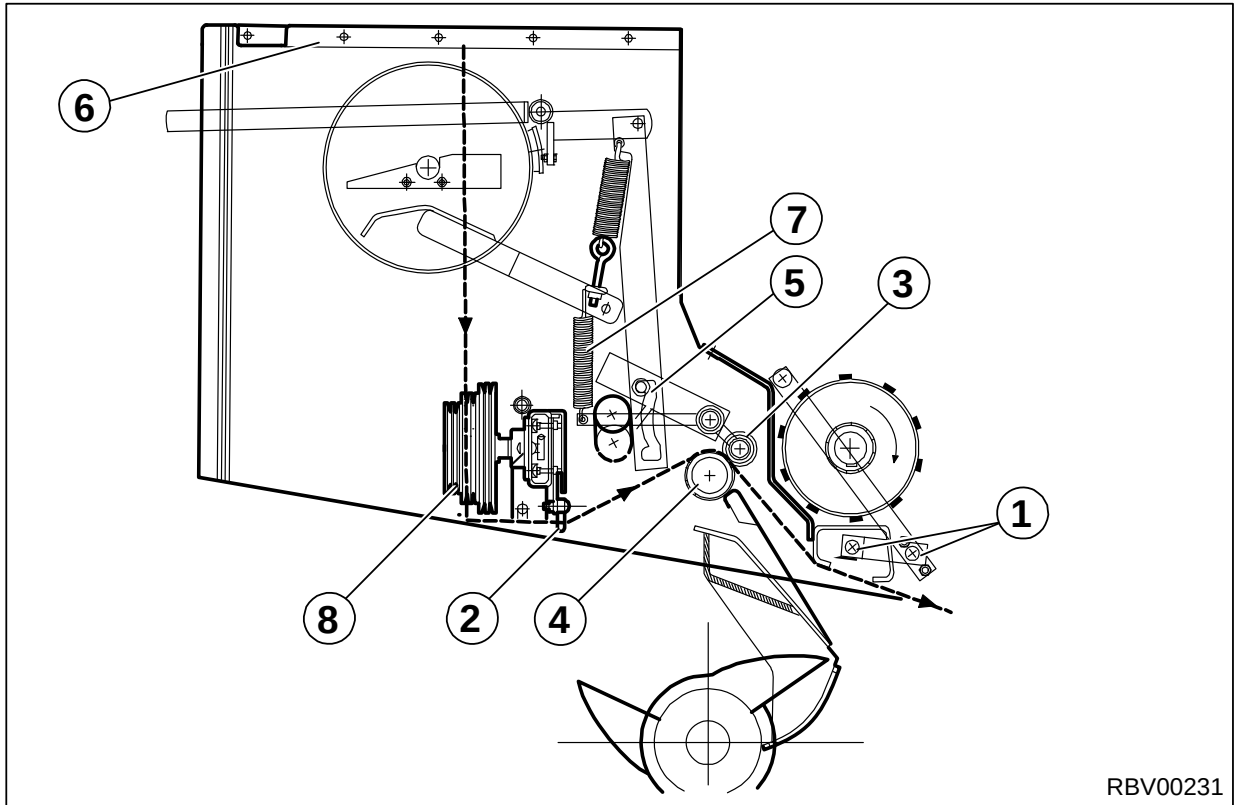
With twine tying version



VP-3-009

Fig. 220

- 1 Blade cassette
- 2 Twine tying
- 3 Pressure roll
- 4 Rubber roll
- 6 Twine box
- 7 Tension spring pressure roll
- 8 Stepped pulley

With twine tying and net tying version


RBV00231

Fig. 221

- 1 Blade cassette
- 2 Twine tying
- 3 Pressure roll
- 4 Rubber roll
- 5 Link guidance
- 6 Twine box
- 7 Tension spring pressure roll
- 8 Stepped pulley

13.17.2 Function of Tying

The upper twines are guided from the twine box through twine guide eyes and twine brake to the stepped pulley (8). The two lower twines are guided from twine brake directly to twine tying. From here, they are guided by means of twine tying (2) between rubber roll (4) and pressure roll (3) in the area of blade cassette (1).

When starting wrapping process, the rubber roll (4) is driven and conveys the twine in the area of conveyor channel and rotating round bale. The still conveyed crop ensures that the twine is picked up with the round bale. The twine tying (2) leads two twines from inside to outside and then again to the inside over the round bale. At the same time the twine tying leads the other twines from outside to inside and back again over the round bale.

A sensor on the twine tying reports that the wrapping process is completed. The twine is cut off and the wrapping process is completed.

Operation

13.17.3 Setting the tying twine in place



DANGER! - Unexpected movement of a machine component.

Effect: Danger to life, injuries.

- The net may only be inserted by one person.
- Make sure that there is no other person in the movement area of the machine.
- Switch off PTO shaft and engine, remove the ignition key and carry it with you.
- Switch off control unit.



Note

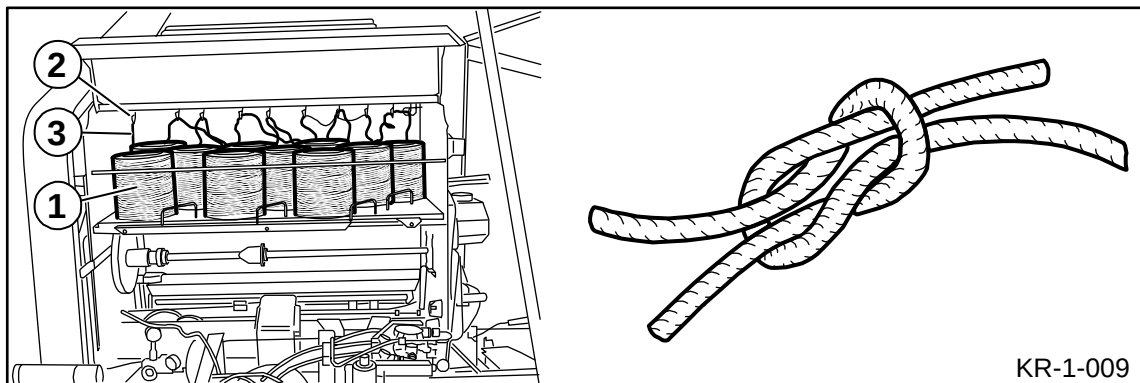
When placing the tying twine in the twine box, make certain that the labeling on the rolls can be read. Make certain the side marked "Up" is facing up.



CAUTION! - Contamination of tying twine and tying mechanism by oil and grease

Effect: Machine damage and problems when unwinding the tying twine

- Twine, twine tensioner and eyes must not be contaminated with oil or grease.
- The parts of twine tying device the tying twine or net passes through must not be soiled with oil or grease.



KR-1-009

Fig. 222

The tying twine must be prepared and inserted when the machine is at standstill.

- Switch off the PTO shaft of the tractor.
- Switch off tractor engine.
- Before knotting the twine rolls (1), pull the twine (3) through the related twine guide (2).
- Knot the twine according to the figure.

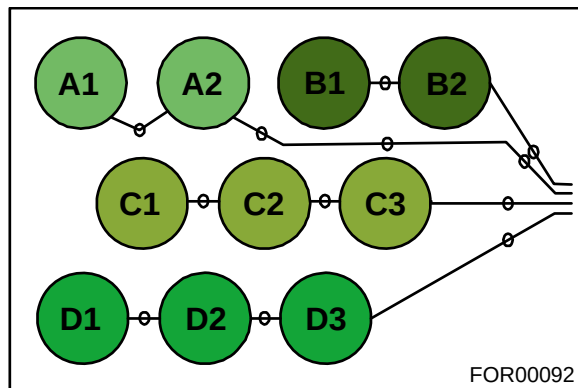


Fig. 223

	the end of twine roll	with the beginning of twine roll
Twine A	A1	A2
Twine B	B1	B2
Twine C	C1	C2
	C2	C3
Twine D	D1	D2
	D2	D3

Producing twine A and B:

- Guide the end of the twine of twine roll (A2 or B2) through the eyes above and through the twine brake out of the twine box.
- Connect the end of twine roll (A1 or B1) through the eye above with the beginning of the twine of twine roll (A2 or B2) by means of reef knot.

Producing twine C and D:

- Guide the end of twine of twine roll (C3 or D3) through the eyes above and through the twine brake out of the twine box.
- Connect the end of twine of twine roll (C2 or D2) through the eye above with the beginning of the twine of twine roll (C3 or D3) by means of reef knot.
- Connect the end of the twine of twine roll (C1 or D1) through the eye above with the beginning of the twine of twine roll (C2 or D2) by means of reef knot.

Operation

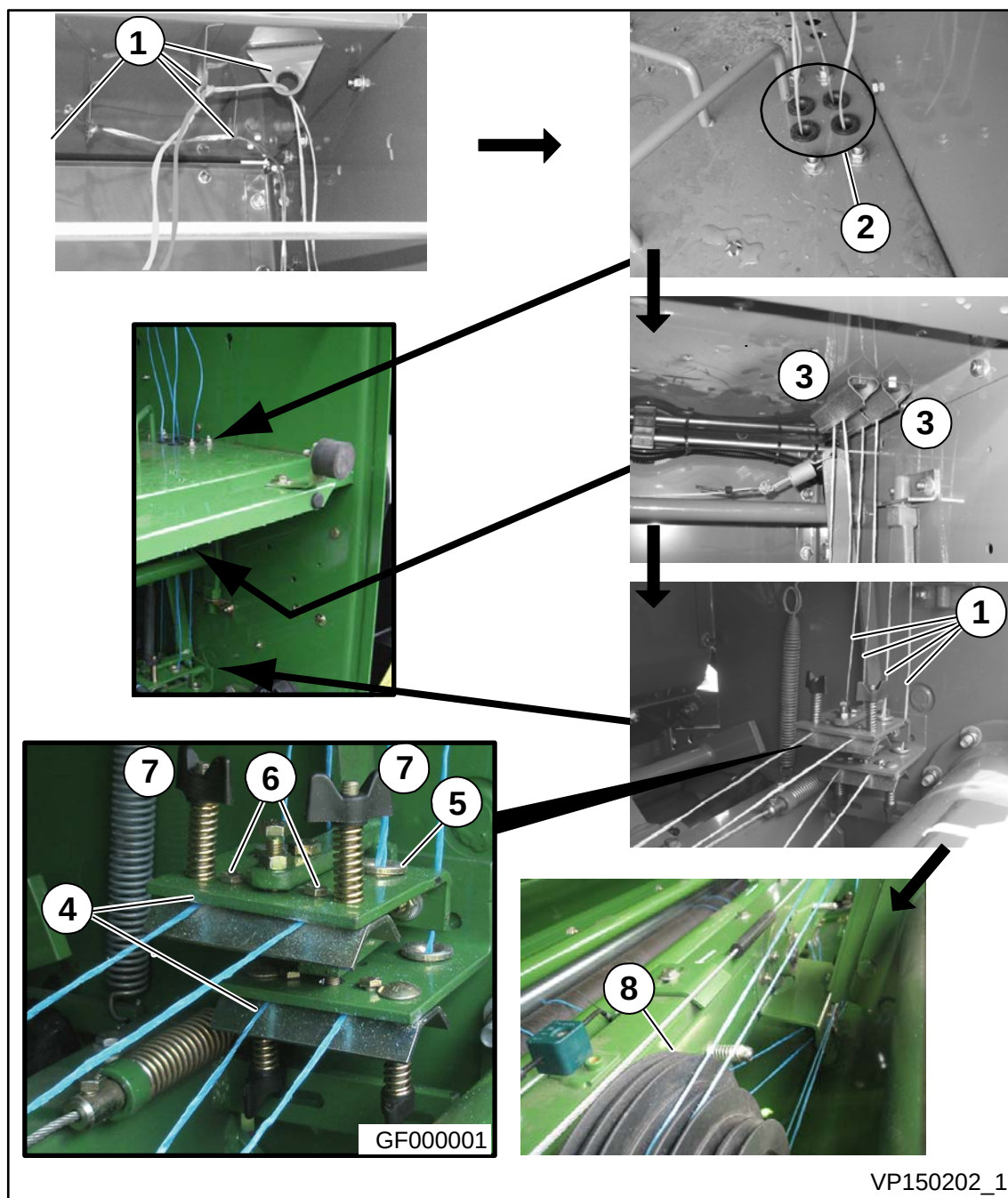


Fig. 224

- Guide the four twines straight down through the twine guides (1) in the twine box without crossing them. Thread one twine each into one eye (2).
- Guide the twine coming from above through the twine retainers (3) and further downward to the both twine brakes (4).
- Guide two twines each through the eyes (5) of the both twine brakes (4) and further on, as shown in detail GF000001.



Note

Make sure that the twine is between screws (6) and spring compressors (7).

- Guide the both twines from the upper twine brake to the stepped pulley (8).

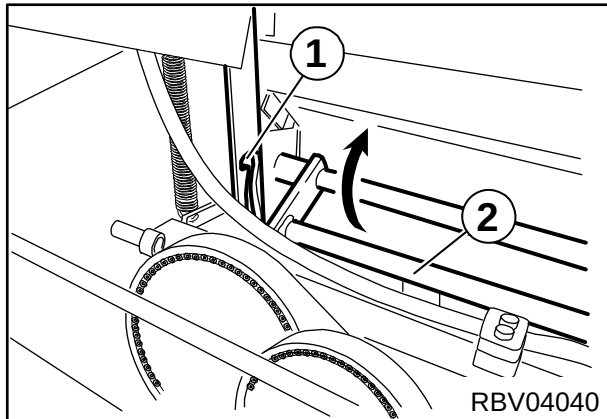


Fig. 225



Note

If net tying is available, the net spreader (2) must be swivelled into the upper position when using twine tying.

The link in the guide iron (1) ensures that the net spreader (2) is held in its position.

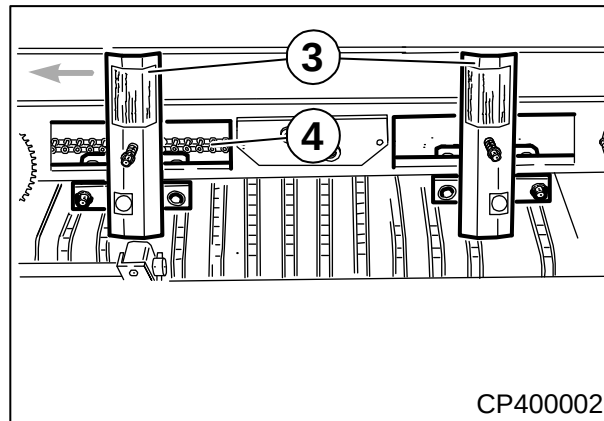


Fig. 226

- Open cleaning valves (3) of twine tying.
- Turn twine tying manually on the stepped pulley in the working direction (see arrow).
- Remove soiling in area (4).

Operation

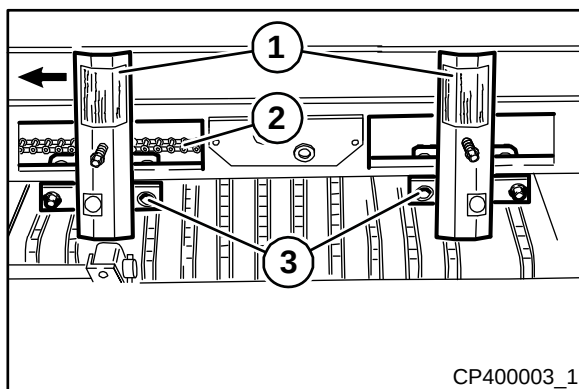


Fig. 227

- Close cleaning valves (1) again.
- Turn stepped pulley in direction of arrow until the twine guide slides (3) move from outside to the middle into initial position.



Note

The twine guide slides (3) must move to the middle by turning the stepped pulley. Otherwise turn the stepped pulley in the direction of arrow until the initial position (see figure) is reached.

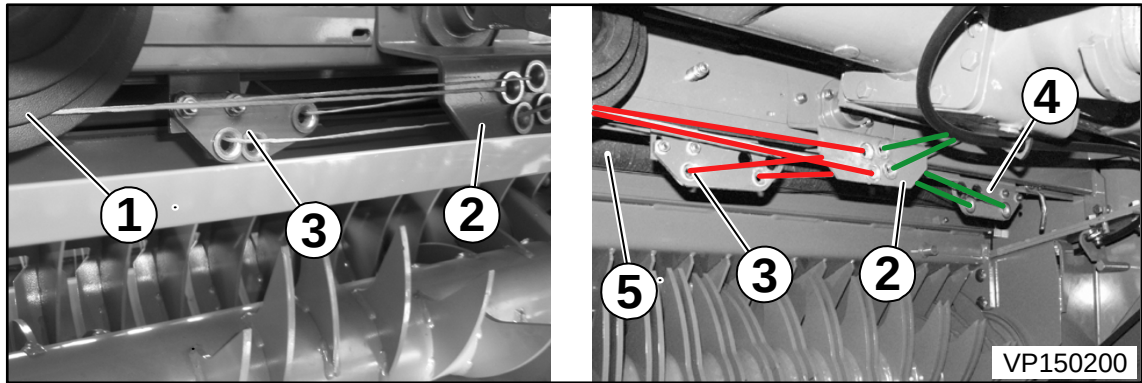


Fig. 228

- Guide the twines coming from the upper twine brake around the stepped pulley (1), through the distributor eyes (2) and further on through the distributor eyes (3).
- Thread the twines coming from the lower twine brake directly through the distributor eyes (2) and then further on through the distributor eyes (4).
- Lay the twine ends over the rubber roll (5).

**Note**

The twine must be laid at least approx. 25 cm over the rubber roll (5).

The number of twine wraps is set on the stepped pulley (1) in the twine box.

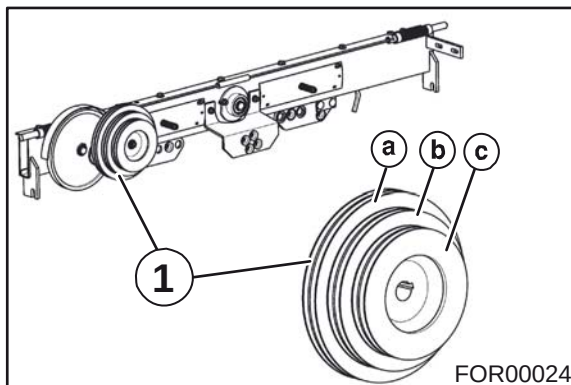


Fig. 229

Length of crop	Ø of stepped pulley (1)	Number of wrappings
small	big (a)	large
medium	medium (b)	medium
long	short (c)	small

The diameter of the stepped pulley (1) must be smaller the longer the crop. Thus the round bale is wrapped the less with twine.

Operation

13.18 Net Wrapping

13.18.1 Net wrapping parts

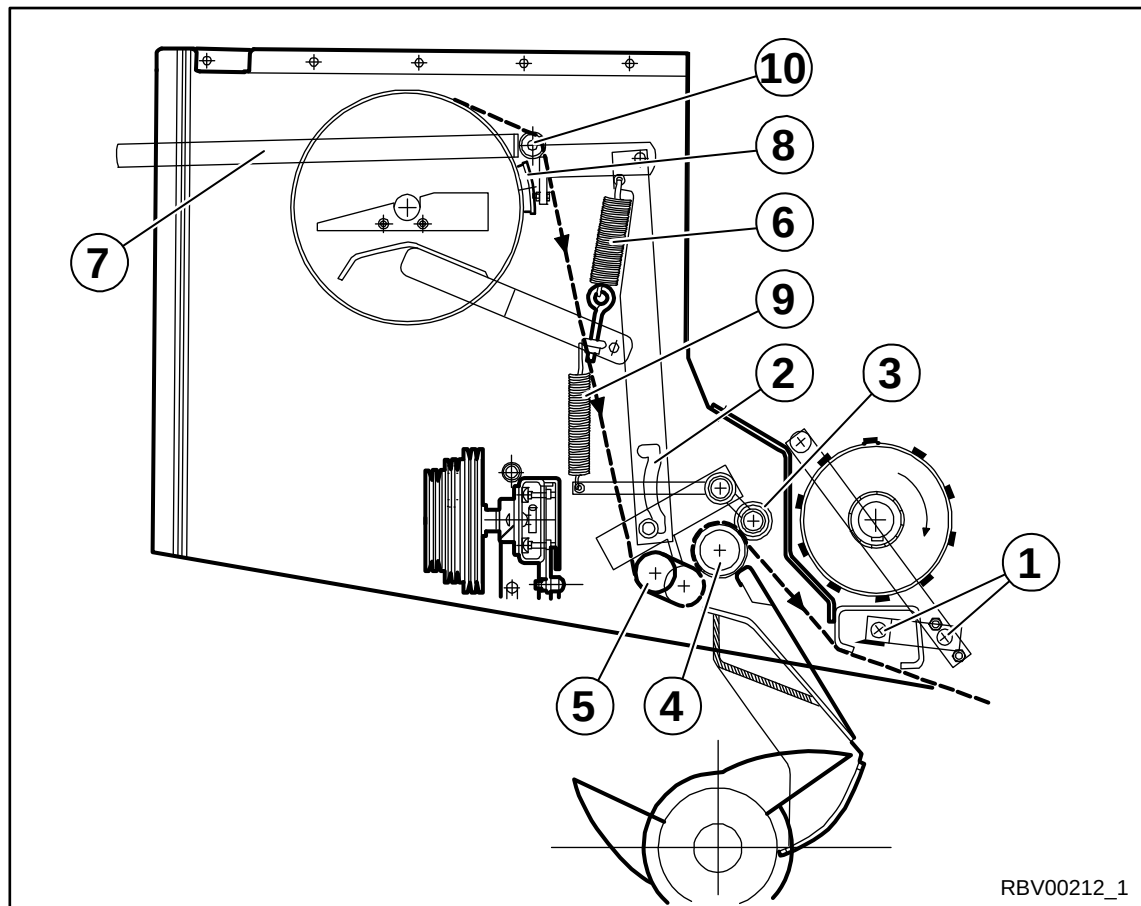


Fig. 230

1	Blade cassette	2	Link guidance
3	Pressure roll	4	Rubber roll
5	Net spreader	6	Net brake spring
7	Brake lever	8	Net brake
9	Pressure roll spring	10	Deflection shaft

**ATTENTION! – Net and net wrapping contaminated with oil and grease**

Effect: Machine damage and problems when unrolling the net.

- Net and components of the net wrapping must not be contaminated with oil or grease.

The net is guided from the net roll over the deflection shaft (10) to the net spreader (5); from there, it is guided between rubber roll (4) and pressure roll (3) in the area of blade cassette (1). When triggering the wrapping process, the rubber roll (4) transports the net in the area of conveyor channel and rotating round bale. Still conveyed crop ensures that the net is picked up in the round bale. Due to its own rotation, the round bale pulls the net off the net roll, over rubber roll (4) and net spreader (5).

The net is held stiff by the net brake (8) during wrapping process.

After the wrapping process is completed, the blade cassette (1) is swivelled in the net corridor and the net is cut off.

13.18.2 Inserting Net Roll**DANGER! - Unexpected movement of a machine component.**

Effect: Danger to life, injuries.

- The net may only be inserted by one person.
- Make sure that there is no other person in the movement area of the machine.
- Switch off PTO shaft and engine, remove the ignition key and carry it with you.
- Switch off control unit.

**Note**

The start of the net roll must point towards the machine and it must be possible to pull it out from above.

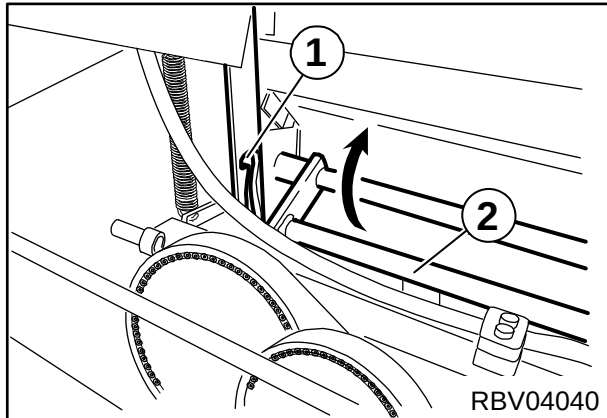


Fig. 231

Prepare net roll and insert it if the machine is at a standstill:

- Switch off tractor PTO shaft
- Switch off tractor engine.
- Pull link guide (1) to the front.
- Swivel net spreader (2) upward and let it engage in the top link.

Operation

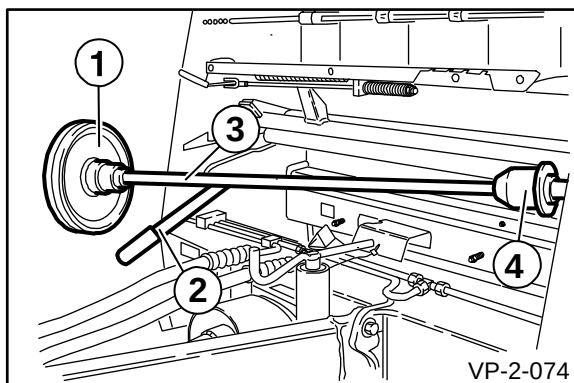


Fig. 232

- Raise the lever (2).
- Swing the brake disc (1) and the net roll mounting shaft (3) forward.
- Detach the brake disc (1).
- Slide the net roll onto the net roll mounting shaft (3) and the support (4).

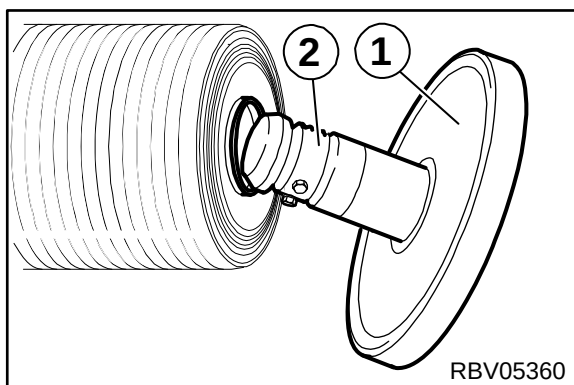


Fig. 233

- Slide the brake disc (1) and cardboard tube clamp (2) anticlockwise into the cardboard tube and then onto the net roll mounting shaft as far as possible.

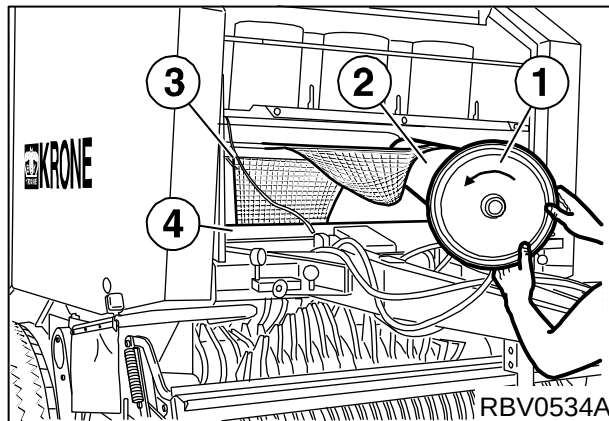


Fig. 234

- Feed the net (2) over the deflection shaft (3) to the net spreader (4).
- Swing the net roll mounting shaft back into its support.

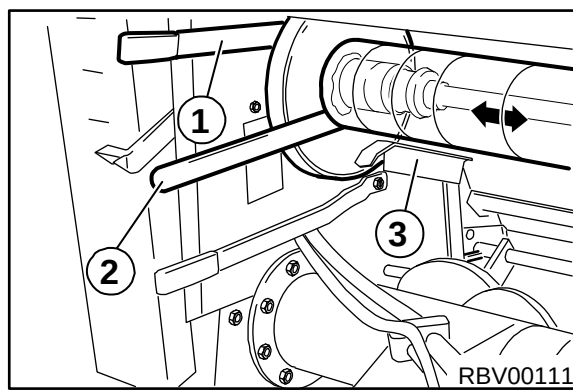


Fig. 235

- Once installed, the net roll can be aligned to the right and left in the centre to the machine using the mounting lever (2).
- To pull the net, release the brake. To do this press the lever (1) downwards.
- Place the net brake buttons (3) below the net roll.

Operation

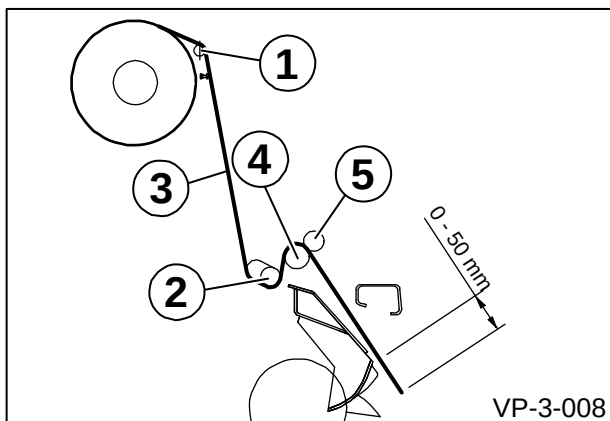


Fig. 236

- Insert net (3) over the deflection shaft (1) under the net spreader (2) between rubber roll (4) and pressure roll (5). The net must hang approx. 0 to 50 mm over the scraper of conveyor roller or cutting roller.

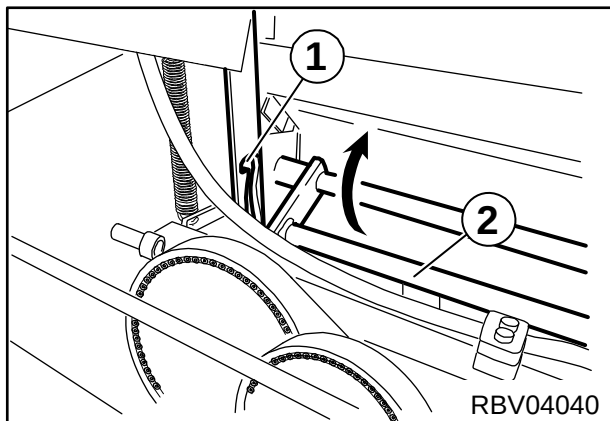


Fig. 237

- Pull flat bar (1) to the front
- Fold net spreader (2) down and ensure that it engages.



14

Settings



WARNING!

If the basic safety instructions are not followed, people may be seriously injured or killed.

- To avoid accidents, the basic safety instructions in the chapter Safety must have been read and followed, see chapter Safety "Basic safety instructions".



WARNING!

If the safety routines are not adhered to, people may be seriously injured or killed.

- To avoid accidents, the safety routines in the chapter Safety must be read and followed, see chapter Safety "Safety routines".

Settings

14.1 Tying unit

14.1.1 Setting the Twine Brake

The position of the twine limiter determines the distance from outermost wrapping to the outside edge of the bale.

The setting is made depending on length and type of crop to avoid that the twine slips off the round bale twine.

Length of crop	Distance of both twine limiters
small	close
medium	medium
long	wide

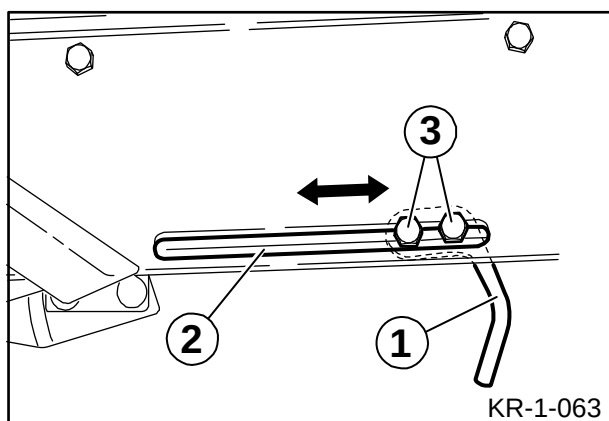


Fig. 238

Adjusting the twine limiter (setting must be the same on both sides):

1. Fold the tying unit forward.
2. Loosen the screws (3).
3. Push the twine limiter (1) into the desired position.
4. Tighten the screws (3).

14.1.2 Adjusting the twine brake

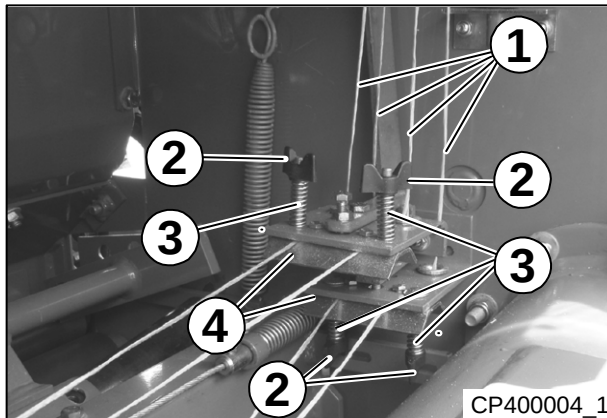


Fig. 239

The twine brakes (4) are located in the twine box. The tying twine (1) is held under tension by the setting screws (2) above and below. Different types of tying twine may have different friction properties. The drawing tension of the tying strand must be checked when you start using a different type of tying twine. The dimension of the compression spring is based on the tying twine selected and must be determined in each individual case by testing in the twine strand.

Setting the twine brake (perform setting always both sides):

1. Clockwise rotation of adjusting screws (2) (higher spring pretensioning (3), bigger braking power).
2. Antilockwise rotation of adjusting screws (2) (higher spring pretensioning (3), bigger braking power).



Note

The twine has always to be hold under tension in order that a correct cutting off by the knives is ensured.

Do not tighten the brake to the extent that the twine slips through the rubber roller when starting.



Note

The setting of the respective compression spring has possibly to be carried out in different ways in order that the cut off twine ends indicate the same length.

Settings

14.1.3 Loosening the twine brake

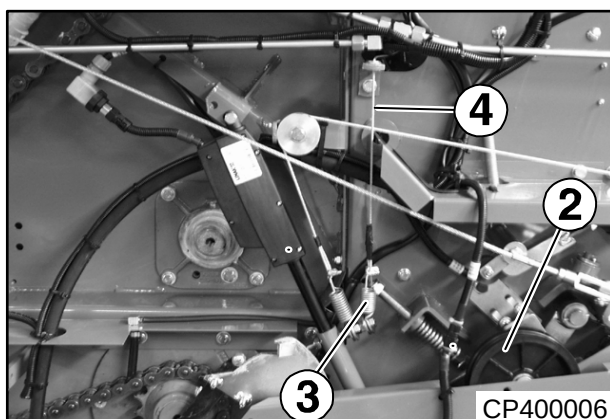


Fig. 240

1. Move the tension arm (2) from below into central position.
In this position
 - the tension spring (3) must not be tensioned,
 - tension on the wire rope (4) must be slightly released.

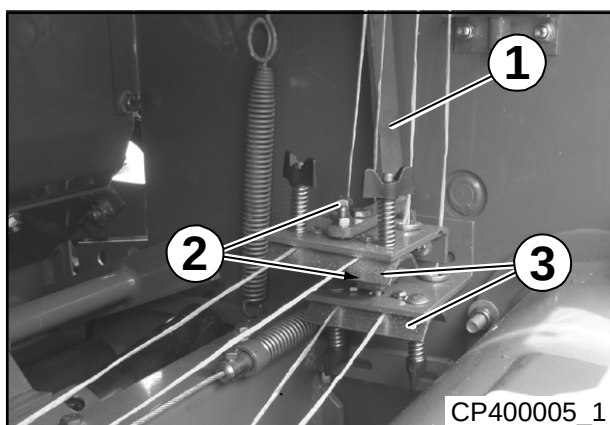


Fig. 241

The brake is released by the adjusting lever (1) when starting.

Setting the twine brake (depends on yarn count):

1. Turn the screw (2) clockwise (thicker yarn count)
2. Turn the screw (2) anticlockwise (thinner yarn count)



Note

When the adjusting lever (1) is pressed, both brake plates (3) have to be raised evenly. If this is not the case, one can adjust with screws (2).

14.1.4 Adjusting the idler roller

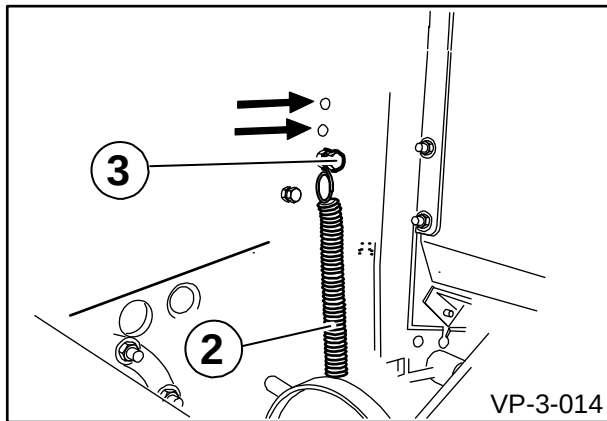


Fig. 242

If the twine is not being drawn in correctly at the start, the pressure of the idler roller can be increased with the spring (2):

Right-hand side

1. Detach spring (2).
2. Remove the screw (3) and mount it in one of the top holes.
3. Reattach the spring (2).

Left-hand side

Pressure can be increased by hooking the spring into the holes.

14.1.5 Adjusting the sensor

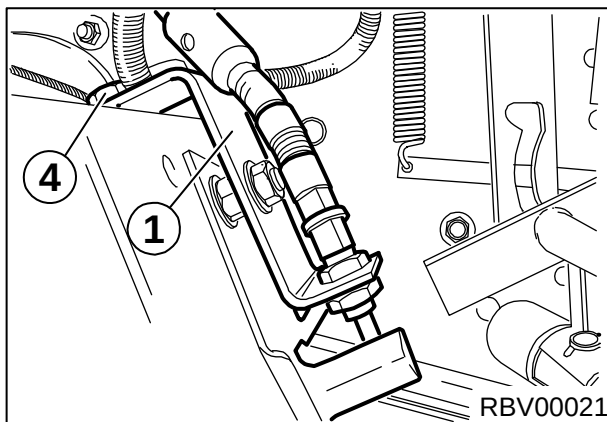


Fig. 243

To allow for the twine not always starting or being cut off in the same place, the sensor (1) can be moved left or right.

1. Loosen the screw (4).
2. Move the sensor support (1).
3. Retighten the screw.

Settings

14.1.6 Adjusting the net brake

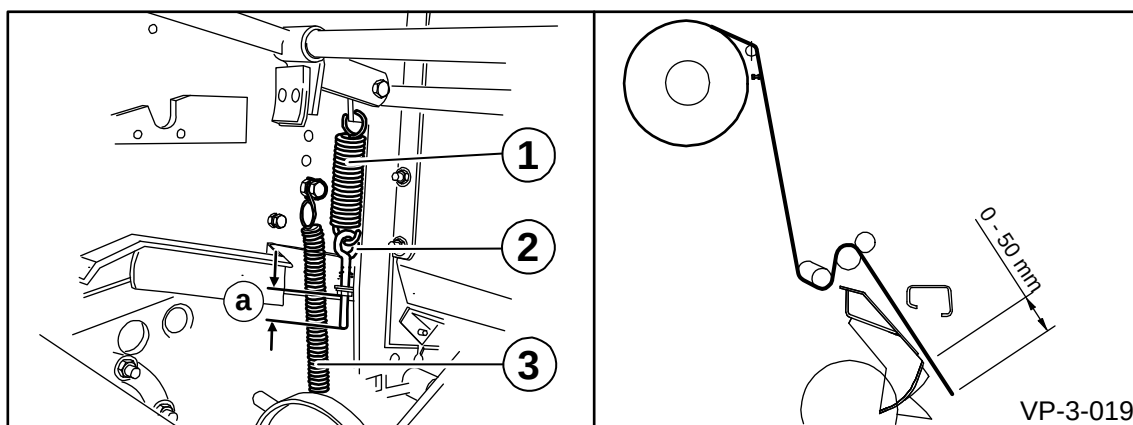


Fig. 244



Note

If the net is caught during baling, tension on the net brake spring (1) must be increased.

In the default setting the dimension of the clamping screw should be $a = 35 \text{ mm}$.

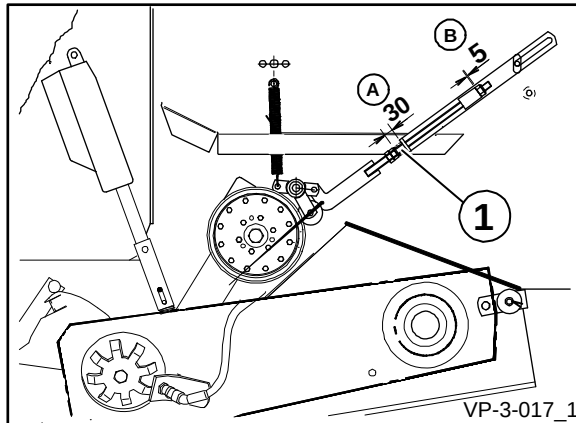
The spring (1) of the brake can be adjusted on the ring bolt (2).

If the net is not being drawn in correctly at the start, the pressure of the idler roller can be increased with the spring (3).



Note

The net brake setting depends on the type of net being used. The net brake should be set in such a way that after the tying process the net hangs into the channel by approx. 0 - 50 mm over the scraper. Always use a speed of 540 rpm for wrapping.

14.1.7 Adjusting the additional net brake**Fortima V 1500 (MC) / V 1800 (MC)****Fig. 245**

In the basic setting the following dimensions must be set on the compression spring (1):

- Dimension A = 30 mm
- Dimension B = 5 mm

In the basic setting the dimension of the spring must be approx. 35 mm.

Check these values regularly and readjust if necessary.

Settings

14.1.8 Loosening the net brake

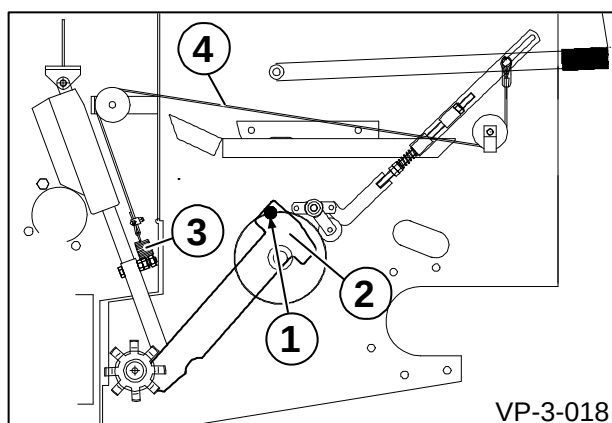


Fig. 246

1. Move the tension arm (2) from below into central position.
In this position
 - the tension spring (3) must not be tensioned,
 - tension on the wire rope (4) must be slightly released.

14.1.9 Net spreader

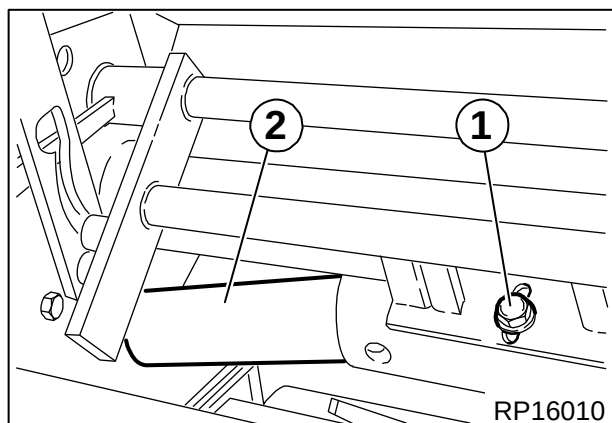


Fig. 247

In order to make use of the optimum width of the net, the net spreader (2) can be turned:

1. Loosen the right and left screw (1).
 - Turn the tube towards the back. The net is drawn extremely wide
 - Turn the tube towards the front. The net is not drawn as wide (use for types of nets that are not very wide)
2. Retighten the right and left screw (1).

14.1.10 Adjusting the Magnetic Coupling (in Case of Twine Wrapping)

The magnetic transmission must be re-adjusted if:

- the slides of the twine tying no longer stop during the start and end phase of tying, but continue to move or
- the slides do not move after the start phase

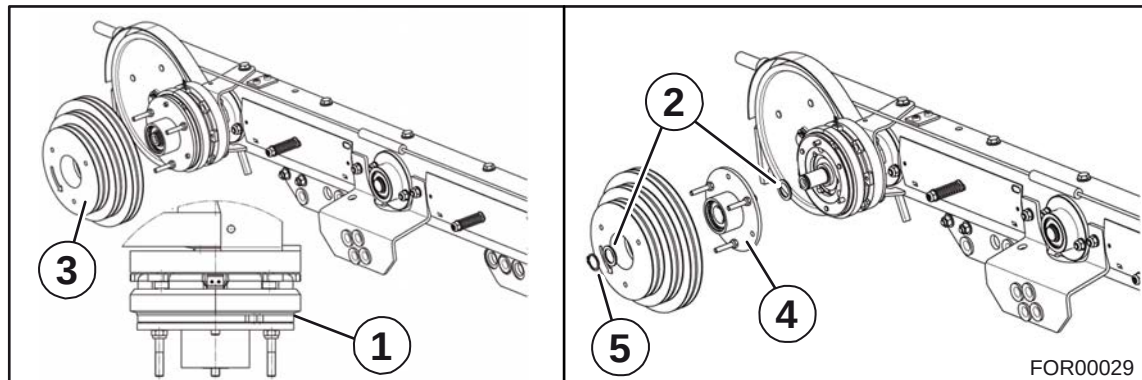


Fig. 248

To ensure correcting functioning of the magnetic transmission, use the shim rings (2) to set the dimension of the gap (1) to 0.2 mm (+0.15/-0.05):

1. Remove the plastic disc (3) and measure the gap (1)
2. If the dimension deviates, disassemble the carrier (4) of the plastic disc by removing the retaining ring (5) and taking off the carrier (4)
3. Use the shim rings (2) to set the dimension of the gap (1) to 0.2 mm (+0.15/-0.05)
4. Re-assemble the disassembled parts in reverse order

Settings

14.2 Central chain lubrication system

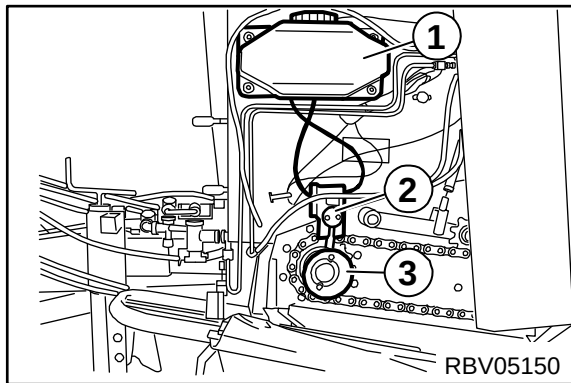


Fig. 249

The central chain lubrication system is attached to the left-hand side of the machine behind the front guard.

Each time the drive shaft makes a rotation, oil is forced out of the tank (1) via the pump (2) and the lubrication manifolds attached to the left-hand and right-hand side of the machine, and onto the brushes on the drive chains.

Different nozzles are built into the lubrication manifolds for each lubrication point.

The delivery rate can be adjusted by means of the eccentric cam (3) on the drive roller.

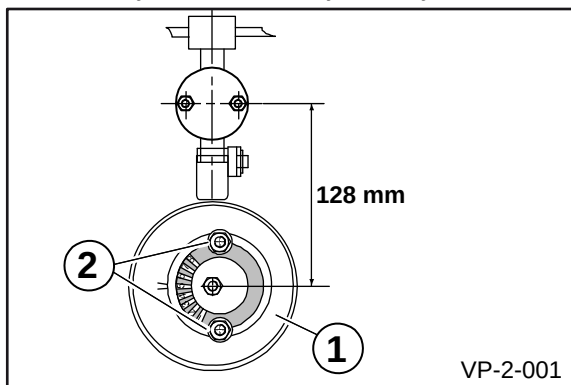


Fig. 250

- Loosen the screws (2).
- Rotate the eccentric cam disc (1).
- Retighten the screws (2).

Position of excenter discs:

- Excenter disc (1) on marking (1) corresponds little oil
- Excenter disc (1) on marking (8) corresponds much oil

Check dimension 128 mm and adjust if necessary.



Note

The amount of oil has to be adjusted to the outside temperature and the harvesting conditions. The chains have to be lubricated sufficiently.

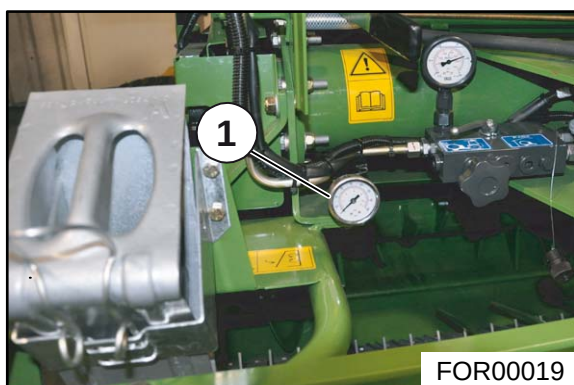


Fig. 251

A pressure gauge (1) which displays the system pressure is installed on the right-hand side of the machine. This pressure increases or decreases according to the setting of the eccentric disc.

Settings

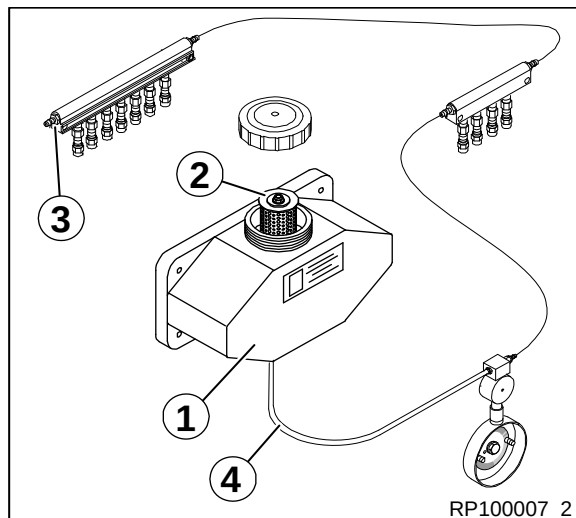


Fig. 252

Depending on consumption, check the oil supply in the container and top off if necessary.

If the lubricant container is empty, the central chain lubrication system needs to be bled:

- Top up the reservoir with oil.
- Remove the container hose (4) of the pump and wait until oil is leaking.
- Install the hose to the pump again.
- Open venting screw (3) and actuate the pump manually until oil flows without bubbles out of the valve block.



Note

Replace filter (2) once a year. First remove, empty and then thoroughly clean the tank (1). Only then replace filter (2). Do not remove filter (2) if oil is present in the filter.



Note

It must absolutely be ensured that no water or dust can enter the tank (1).



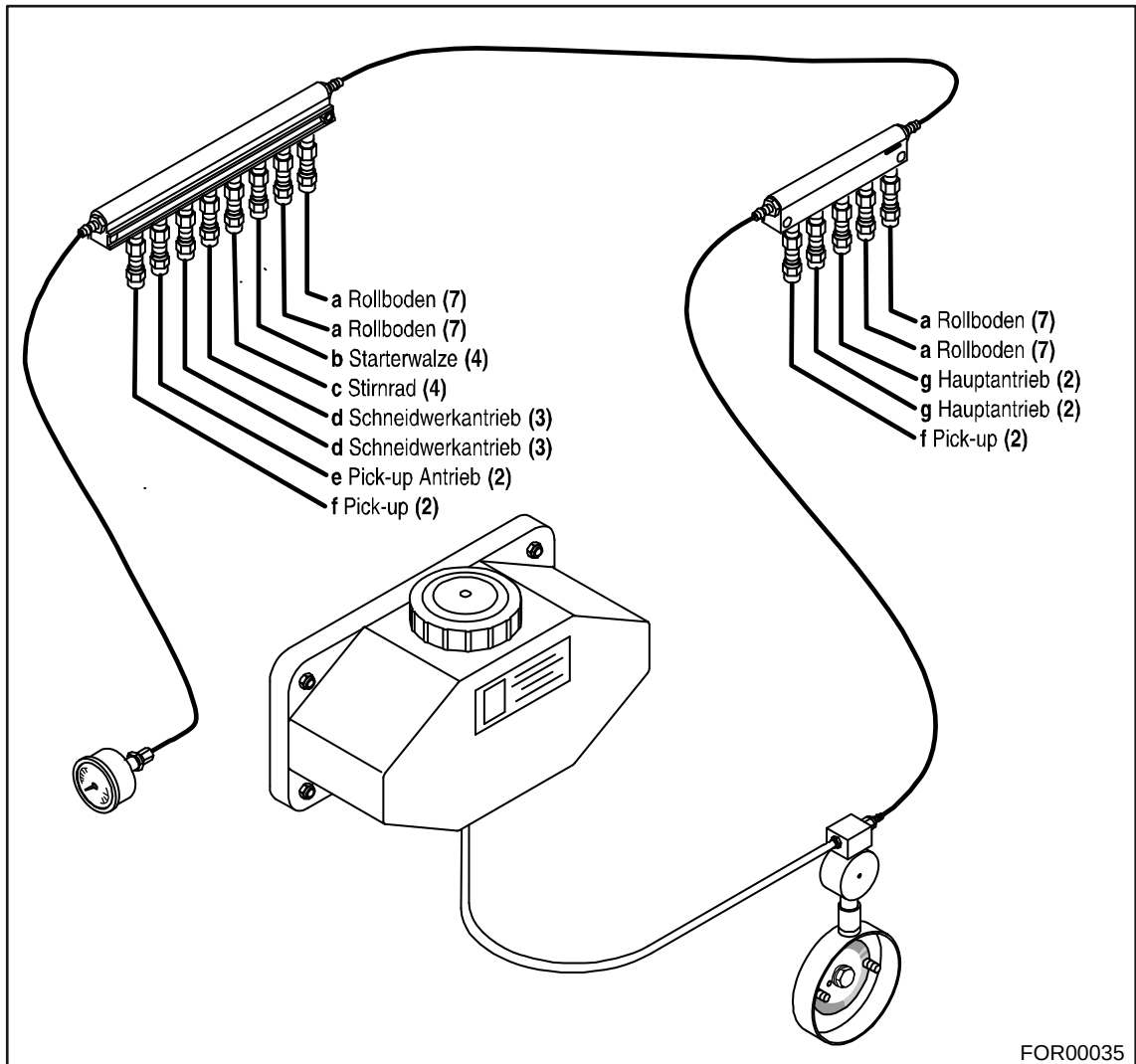
Note

Use recommended oils only!

- Different types of oil can be used.
- The viscosity should be similar to 15W40 (cold surrounding SAE 30, warm surrounding SAE 90).
- Only use biodegradable and non-toxic oils (for example Fuchs Mineral Oil Plantogear 100 - N or Castrol Optimol Optileb GT 100).
- Do not use adhesive oils for chains since these would get stuck inside the system!

14.2.1 Display Central Chain Lubrication System

Fortima F 1250 (MC) / Fortima F 1600 (MC)



FOR00035

Fig. 253

- a Floor conveyor
- b Starter roller
- c Spur wheel
- d Cutting system drive
- e Pick-up drive
- f Pick-up
- g Main drive

The figures in the brackets state the size of the nozzles for the individual lubrication points.



Note

Make certain the correct sizes are used when changing the nozzles. Each size difference doubles the oil delivery rate (MM4 delivers for example twice as much oil as MM3).

Settings

Fortima V 1500 (MC) / V 1800 (MC)

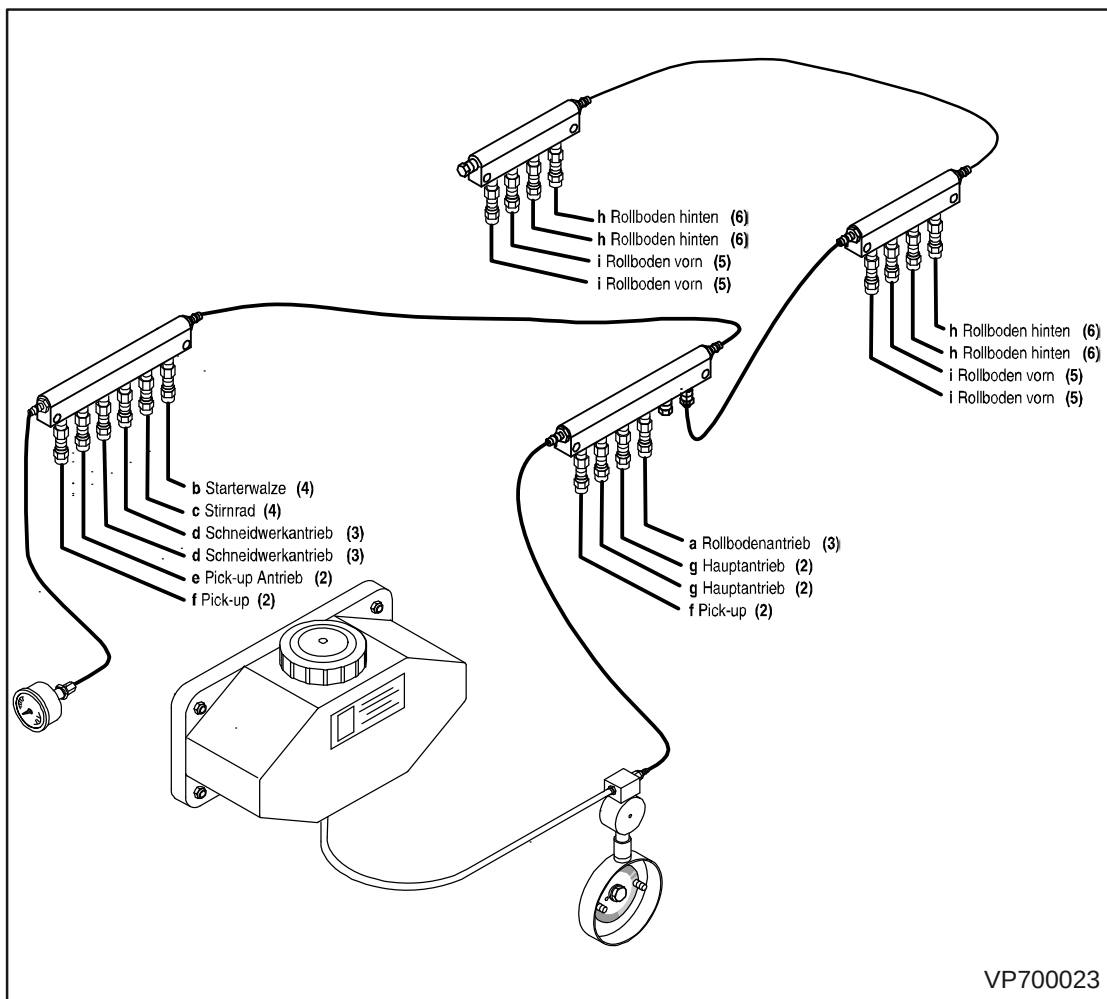


Fig. 254

- a Floor conveyor drive
- b Starter roller
- c Spur wheel
- d Cutting system drive
- e Pick-up drive
- f Pick-up
- g Main drive
- h Floor conveyor at rear
- i Floor conveyor at front

The figures in the brackets state the size of the nozzles for the individual lubrication points.



Note

Make certain the correct sizes are used when changing the nozzles. Each size difference doubles the oil delivery rate (MM4 delivers for example twice as much oil as MM3).

14.3 Adjusting the Automatic Floor Conveyor Stop

Fortima V 1500 (MC) / V 1800 (MC)

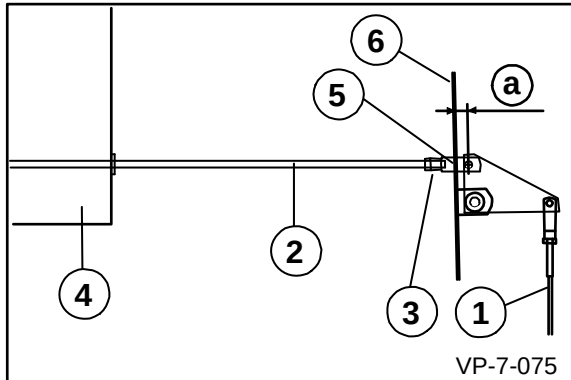


Fig. 255

When the tailgate is opened, the claw coupling (4) is activated by the cable (1) and linkage (2) and the floor conveyors are switched off.

When switched on, dimension a to the side wall (6) must be approximately 22 mm.

Setting:

- Loosen the counter nut (3).
- Remove the bolt.
- Turn the U bar (5) until dimension a is reached.
- Install the bolt and counter nut and retighten.

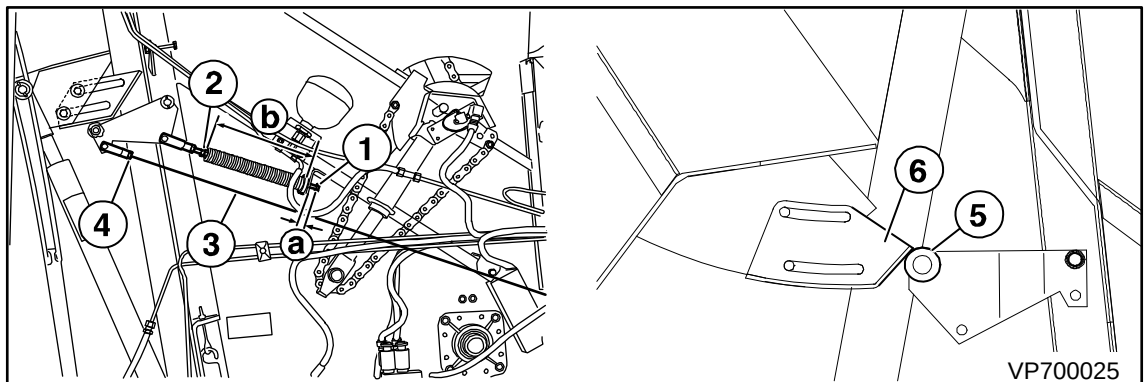


Fig. 256

The pressing force of the spring by the pull cable can be adjusted with the nuts (2).

When the tailgate is closed, dimension b must be approximately 250 mm.

To adjust switching, follow these steps:

- When the rear wall is closed, tension on the cable (3) must be slightly relieved and the claws must be engaged. The cable length can be adjusted on the bar (4).
- With the rear wall slightly opened, adjust the nut (1) so that the roller (5) closes off flush with the tip of the slotted link (6).



Note

The tip of the slotted link (6) must not be under the roller (5) when the rear wall closes.

Settings

14.3.1 Adjusting the switching time

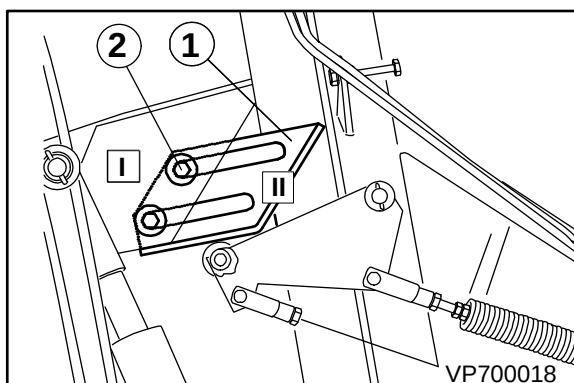


Fig. 257

The switching time for floor conveyor shutoff is pre-adjusted in the factory. It may be necessary to adjust the switching time to adjust to conditions of use in the field.

The switching time can be changed by adjusting the stop (1):

1. Loosen the countersunk screws (2)
2. To adjust the switching time, move the stop (1) in the oblong hole.

Pos. I Floor conveyor shutoff starts later

Pos. II Floor conveyor shutoff starts earlier

15 Maintenance**WARNING!**

If the basic safety instructions are not followed, people may be seriously injured or killed.

- To avoid accidents, the basic safety instructions in the chapter Safety must have been read and followed, see chapter Safety "Basic safety instructions".

**WARNING!**

If the safety routines are not adhered to, people may be seriously injured or killed.

- To avoid accidents, the safety routines in the chapter Safety must be read and followed, see chapter Safety "Safety routines".

**WARNING! - Risk of injury on the opened side guard!**

Risk of injury of the head and the eyes in the area of the opened side guard.

- Consider the opened side guard when working in this area.

15.1 Spare Parts**Warning! - 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.

Maintenance

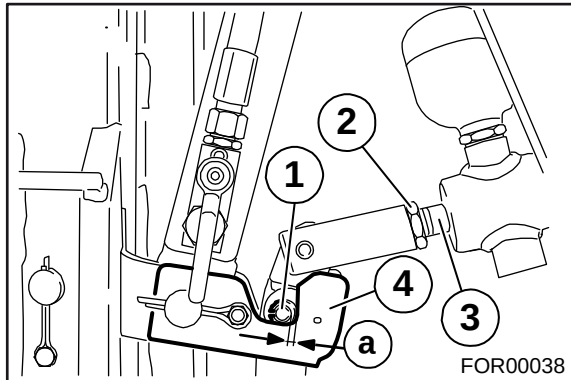
15.2 Overview

Maintenance interval	Machine part	Oil change	Check	Set	Vent	Tighten
after the first 8 operating hours and every time after a wheel is changed	Wheels, wheel nuts					X
after longer downtimes	PTO shaft friction clutch (only for friction clutch)				X	
after first use and then after every 100 bales	Chain tension floor conveyor drive		X	X		
	Chain tension pick-up drive		X	X		
	Chain tension floor conveyor (Fortima F 1250 (MC)/F1600 (MC))		X	X		
when the season begins (after approx. 5 bales)	Chain tension floor conveyor drive		X	X		
	Chain tension pick-up drive		X	X		
	Chain tension roller drive		X	X		
	Chain tension pick-up drive		X	X		
after first use (approx. 30 - 50 operating hours), then annually after each season	Gearbox	X				



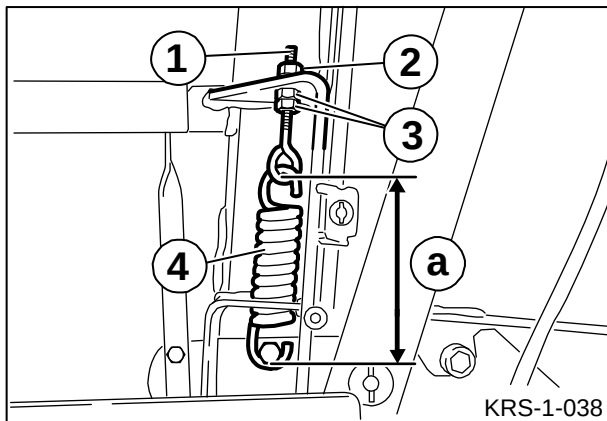
Note

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
Setting Tailgate Lock
Fortima F 1250 (MC) / F 1600 (MC)

Fig. 258

The setting of the tailgate lock is made on both sides on the piston rod (3):

1. Remove the plastic guard on the tailgate, the tailgate must touch the beams on both sides.
2. Loosen the counter nut (2).
3. Turn the piston rod (3) until the distance between the lock hook (4) and the clamping sleeve (1) is $a = 5 \text{ mm}$.
4. Tighten counter nut (2).

Fortima V 1500 (MC) / V 1800 (MC)

Fig. 259

The spring pretensioning on the tailgate lock must be $a = 350 \text{ mm}$.

Retighten spring (1) if necessary:

- Loosen the counter nut (3).
- Turn the nut (2) until the dimension is $a = 350 \text{ mm}$.
- Make the adjustment on both sides.

Maintenance

15.3.1 Setting Lock Hook Stop

Fortima F 1250 (MC) / F 1600 (MC)

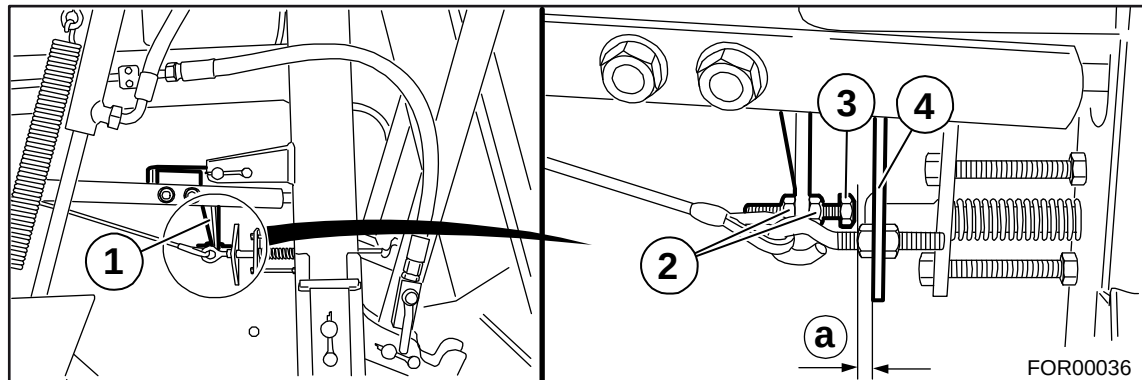


Fig. 260

The following settings of the lock hook blocker (1) must be checked and adapted, if necessary, to ensure the proper function of the lock hook blocker (with opened tailgate):

- Check whether the distance between adjusting screw (3) and button (4) is $a = 2-5$ mm. If this is not the case, perform the following setting:
 1. Loosen the counter nut (2)
 2. Turn the adjusting screw (3) until the distance is $a = 2-5$ mm.
 3. Tighten the counter nut (2).

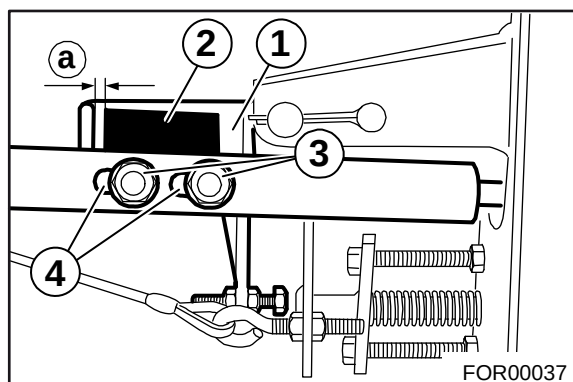


Fig. 261

- Check whether the distance between lock hook blocker (1) and stop (2) is $a = 2-5$ mm. If this is not the case, perform the following setting (with opened tailgate):
 1. Loosen the both nuts (3).
 2. Move the stop in the oblong holes (4) until the distance is $a = 2-5$ mm.
 3. Tighten the nuts (3).

15.4 Setting Cutting Blade of Net Tying Device**WARNING! - Risk of injury from sharp blades**

When working on the blade cassette, persons could get hurt by the blades.

- Never touch the blades of the blade cassette with bare hands.
- Always wear protective gloves when working on the blade cassette.

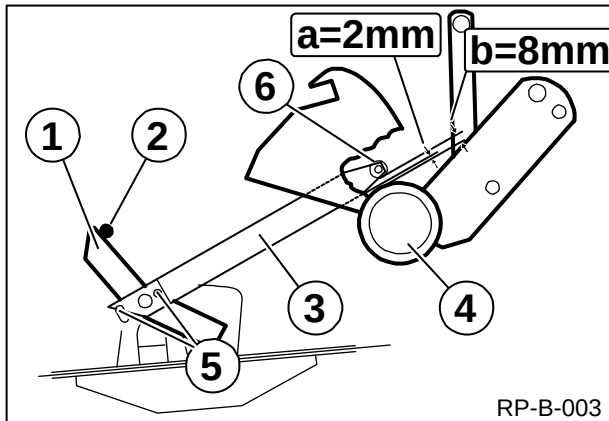
15.4.1 Adjusting the cutting blades of the net wrap system

Fig. 262

If the blade bar stop (1) is resting against the stop (2), there should be a gap of $a = \text{approx. } 2 \text{ mm}$ from the spring rail (3) to the bearing tube (4) or $b = 8 \text{ mm}$ from the bearing (6) to the bearing tube (4).

Adjusting procedure:

- Loosen screw (5).
- Move until dimension $a = 2 \text{ mm}$.
- Tighten the screw (5).

Maintenance

15.5 Setting Scraper Rail to Upper Spiral Roller



WARNING! – Settings on the machine!

Danger to life or serious injuries.

- The shut-off valve on the left hydraulic cylinder must be closed.

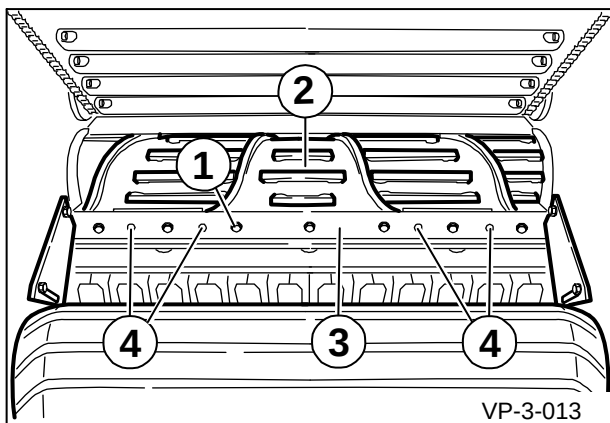


Fig. 263

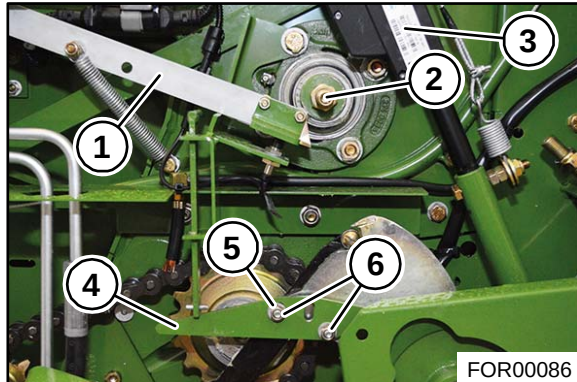
To adjust the distance from the scraper rail (3) to the upper spiral roller (2):

- Loosen the nut (1) and Allen head screws (4) in the cutter bar.
- Move the scraper rail in the oblong hole until it is against the spiral roller.
- Retighten the nut and Allen head screws.



Note

After the setting is made, run the round baler manually and check whether the scraper rail comes in contact with the spiral roller.

15.6 Setting Spring Rail**Fortima F 1250 (MC) / F 1600 (MC)****Fig. 264**

The spring rail (1) has been lifted ex works to above the setting screw (2). Thus the round bales are wrapped optimally with net.

Set the spring rail (1) if the round bales have not been wrapped optimally with net:

- Completely extend the setting motor (3).
- Loosen the screws (6).
- Move the guide tip (4) in the oblong hole (5) until the spring rail (1) is located above the setting screw (2).
- Tighten screws (6).

Maintenance

15.7 Setting Baling Pressure Indicator

Fortima F 1250 (MC) / F 1600 (MC)

15.7.1 Aligning Both Baling Pressure Indicators to Each Other

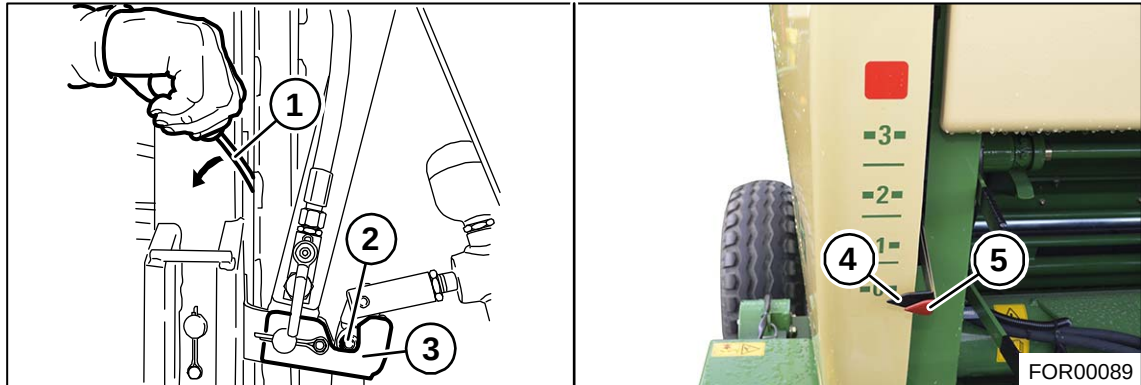


Fig. 265

The baling pressure indicators (4) and (5) must be readjusted if they are not exactly on top of each other:

- Fold up the cover on the right-hand machine side.
- Insert a mounting lever (1) in the gap between tailgate and frame.
- Push tailgate to the rear until the lock hook (3) rests against the roll pin (2).

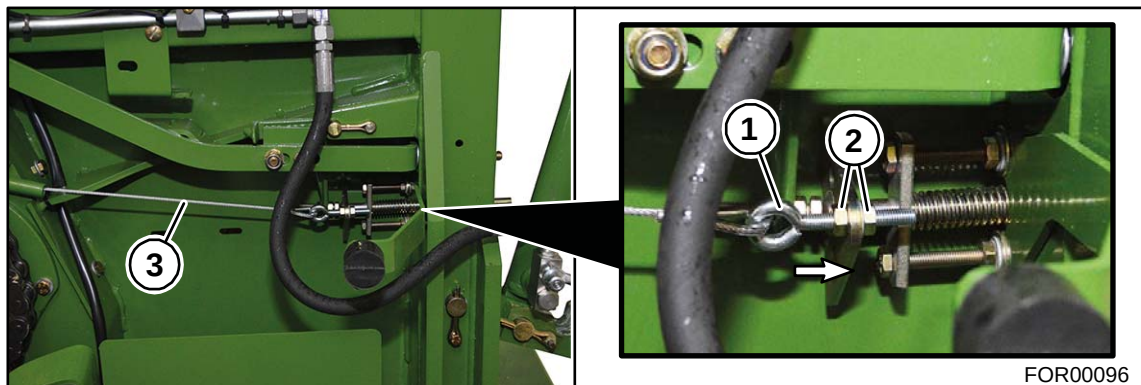


Fig. 266

The following tensioning device is located on the left-hand as well as on the right-hand machine side, depending on the baling pressure indicator to be aligned.

- Loosen the nuts (2) on the left-hand or right-hand machine side.
- To tension the wire rope (3), move eyelet bolt (1) in the direction of arrow. The respective baling pressure indicator moves.
- Tighten the nuts (2).

15.7.2 Setting Baling Pressure Indicator with Closed Tailgate

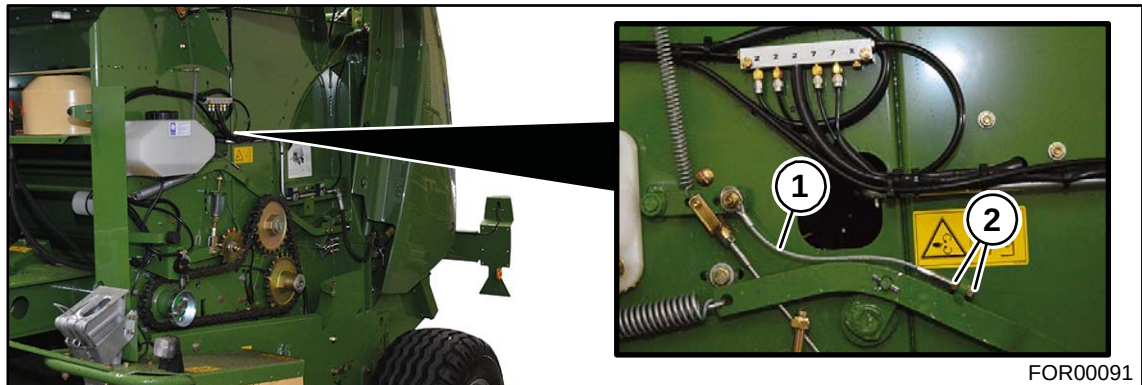


Fig. 267

If the tailgate is completely closed, the baling pressure indicator should be between numbers 1 and 3. If this is not the case, the cable (1) must be set on the right-hand machine side:

- Fold up the cover on the right-hand machine side.
- Loosen the both nuts (2) and turn them until the baling pressure indicator is between numbers 1 to 3.
- Tighten the both nuts (2) against each other.

Maintenance

15.8 Grinding blades



Warning!

Grinding blades Effect: Severe injuries to the eyes

- Always wear safety gloves and goggles when grinding the blades

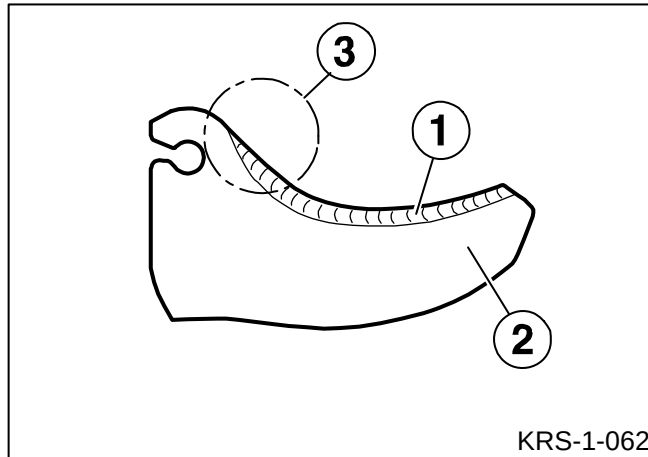


Fig. 268:

Check the sharpness of the blades (2) daily. If necessary, grind the blades after they have been removed on the back of the cutting edge (1). Grind only the ungrooved side. When grinding, make certain no notches are made in area (3).



Note

If at all possible, use the KRONE grinding mechanism for grinding. The Part No. for the blade holder for the KRONE blade grinding tool is 940 003-0.

Avoid allowing the blades to heat up too much when grinding them. The cutting blades are too hot if you can see discolouration in them. Excessive heat reduces the service life of the cutting blades.

The blades (2) must be checked before installation in area (3) (contact point to the stop bar) for accumulations and thoroughly cleaned if necessary. Otherwise it may no longer be possible to swivel the blade bar in completely.

15.9 Sensors

15.9.1 Position of the Sensors

Fortima F 1250 (MC) / F 1600 (MC)

Left Machine Side

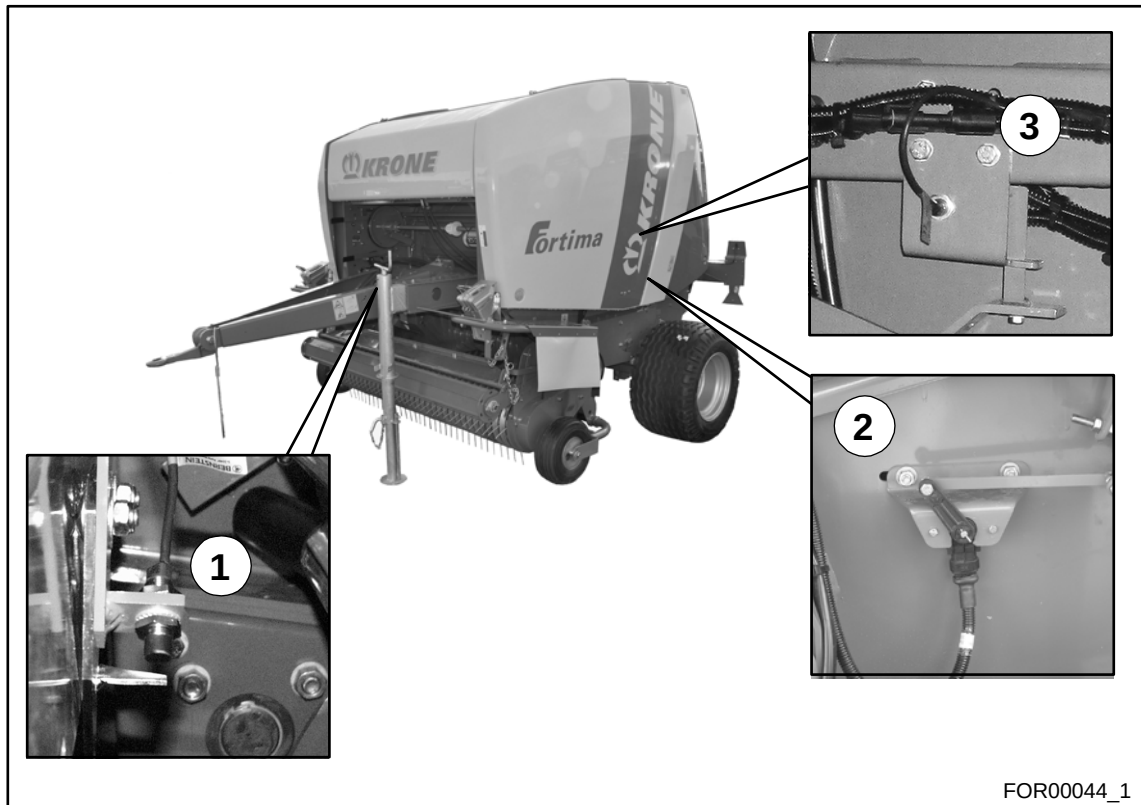


Fig. 269

Pos.	Sensor designation	Distance Transmitter/sensor	Sensor type	Tightening torque
1	Twine stop (B33)	2 mm	Namur	10 Nm
2	Filling left (B9)*		Rotary potentiometer	
3	Bale chamber closed left (B11)*	2 mm	Namur	10 Nm

* Not available with medium operation panel.

Maintenance

Right Machine Side

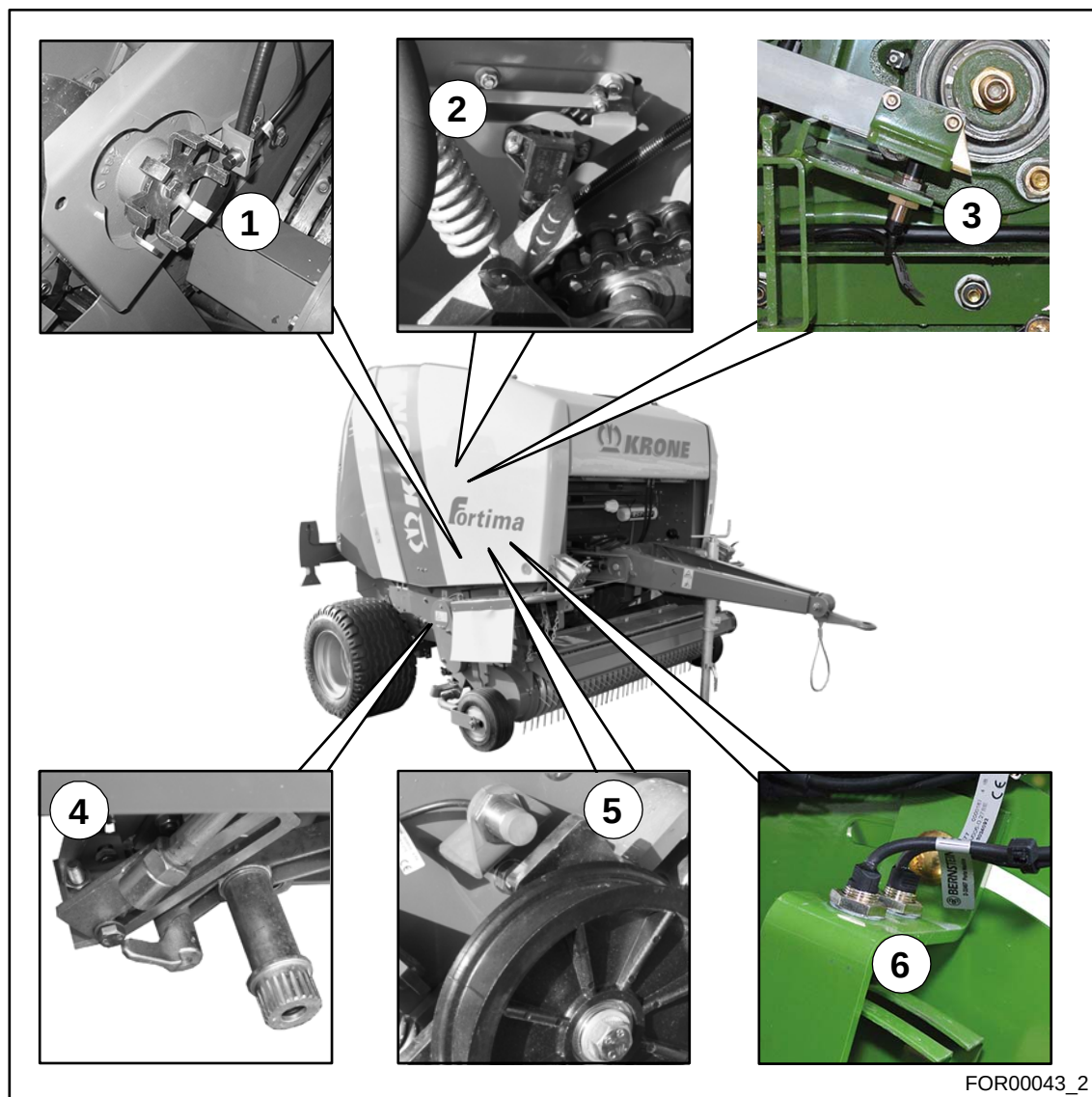


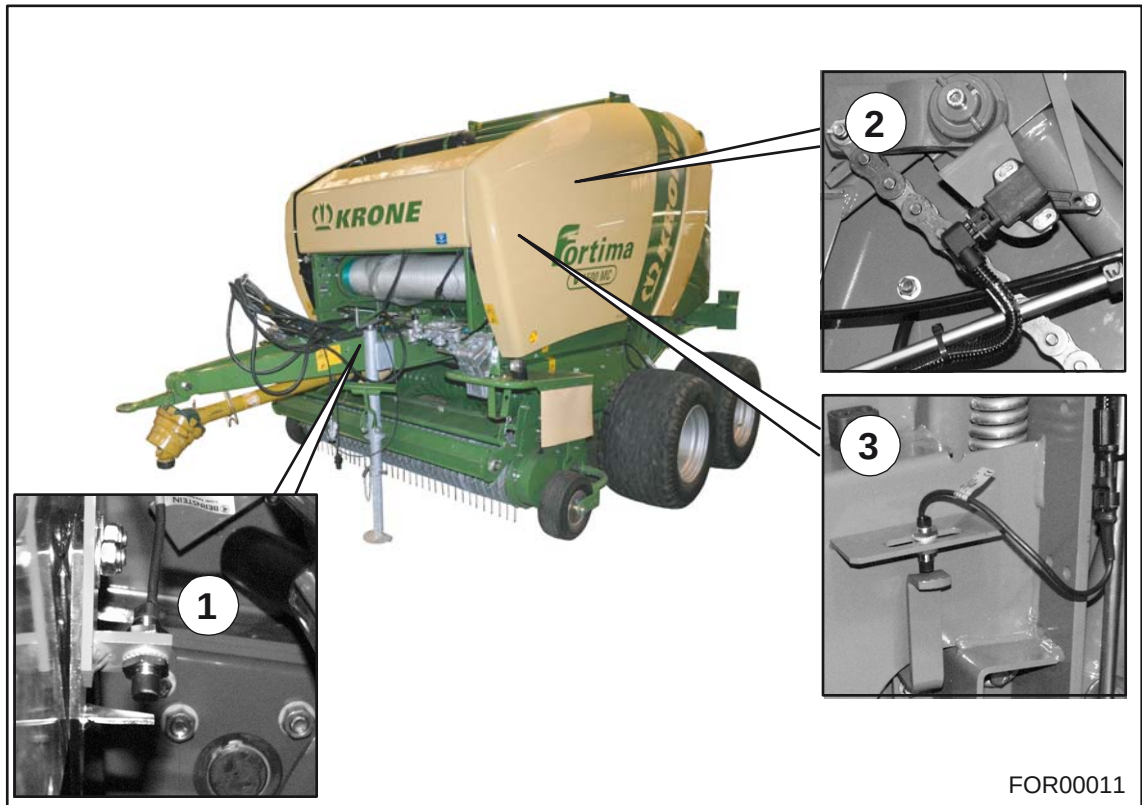
Fig. 270

Pos.	Sensor designation	Distance Transmitter/sensor	Sensor type	Tightening torque
1	Tying process active (B32)*	2mm	Namur	10 Nm
2	Filling right (B10)		Rotary potentiometer	
3	Net tying device	2mm	Namur	10 Nm
4	Blade (B30)*	2mm	Namur	10 Nm
5	Engine centre (B31)	2mm	Namur	10 Nm
6	Bale firmness (B5/B6)	2mm	Namur	10 Nm

* Not available with medium operation panel.

Fortima V 1500 (MC) / V 1800 (MC)

Left Machine Side



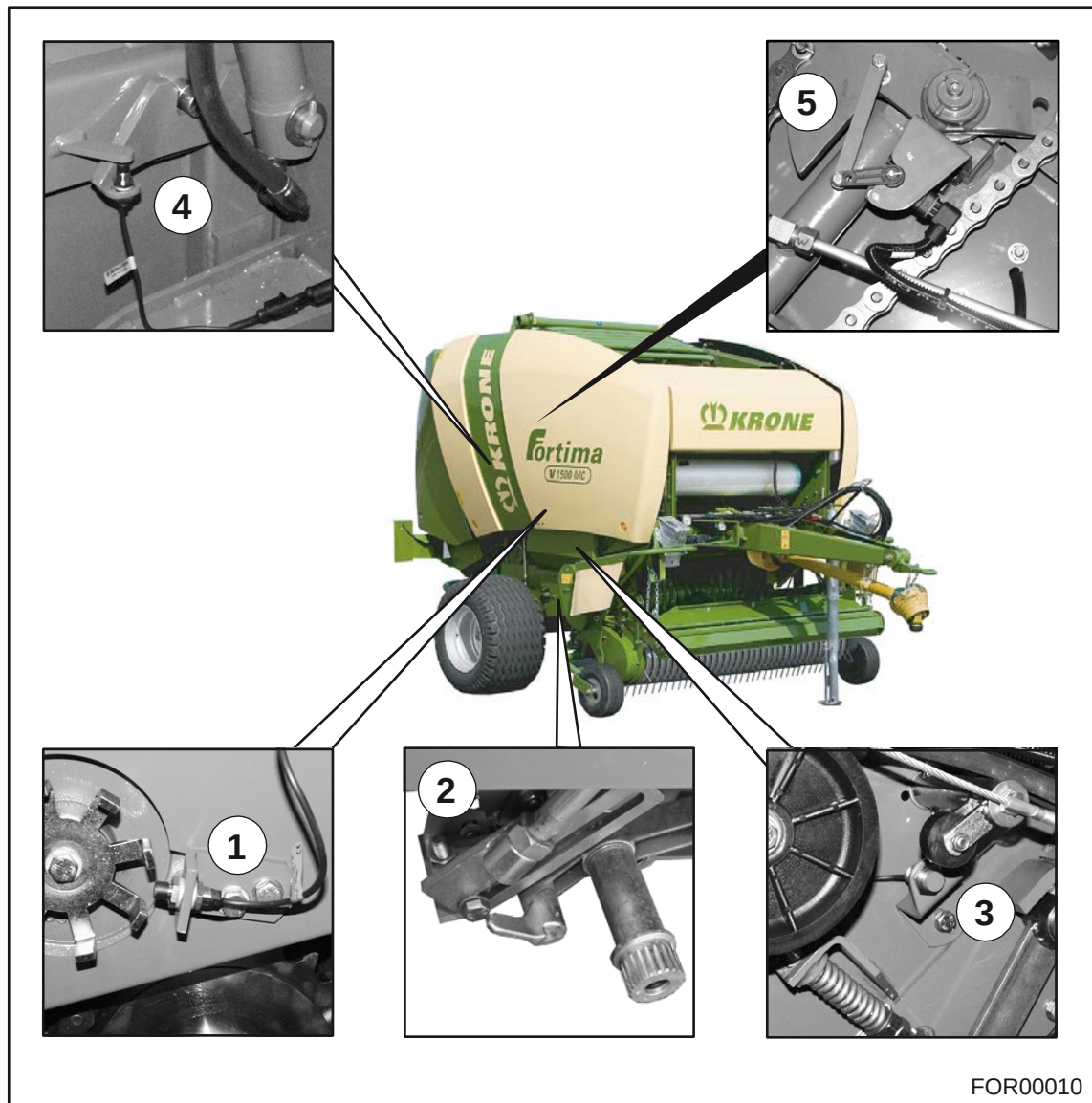
FOR00011

Fig. 271

Pos.	Sensor designation	Distance Transmitter/sensor	Sensor type	Tightening torque
1	Twine stop (B33)	2 mm	Namur	10 Nm
2	Filling left (B9)		Rotary potentiometer	
3	Bale chamber closed left (B11)	2 mm	Namur	10 Nm

Maintenance

Right Machine Side



FOR00010

Fig. 272

Pos.	Sensor designation	Distance Transmitter/sensor	Sensor type	Tightening torque
1	Tying active (B32)	2 mm	Namur	10 Nm
2	Blade (B30)	2 mm	Namur	10 Nm
3	Engine centre (B31)	2 mm	Namur	10 Nm
4	Bale chamber closed right (B12)	2 mm	Namur	10 Nm
5	Filling right (B10)		Rotary potentiometer	

15.9.2 Settings Sensors

15.9.2.1 Namur Sensor d = 18 mm*

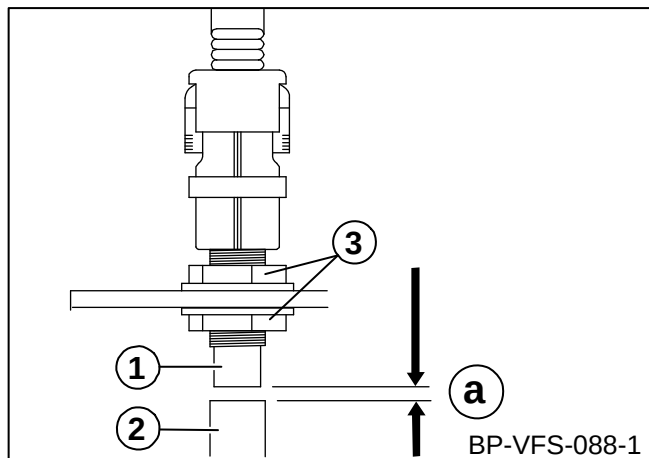


Fig. 273

The dimension between transmitter (2) and sensor (1) must be **a = 2 mm**.

Setting:

- Loosen the nuts (3) on both sides of the sensor.
- Turn nuts until dimension **a = 2 mm** is reached.
- Tighten nuts.

* Not available with medium operation panel.

15.9.2.2 Namur sensor d = 12 mm

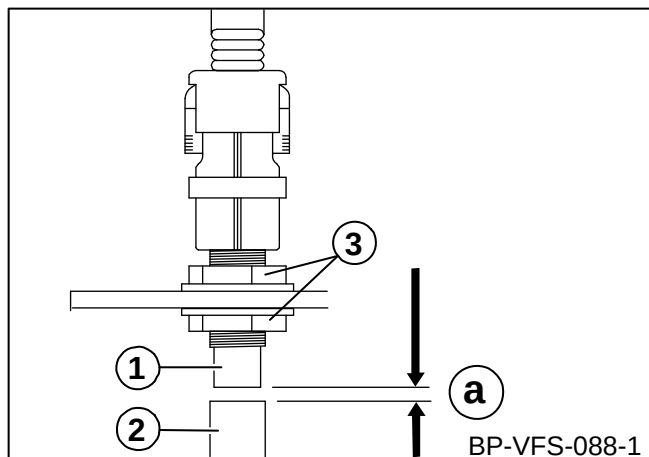


Figure 274

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.

Maintenance

15.9.3 Central Position of Engine Sensor

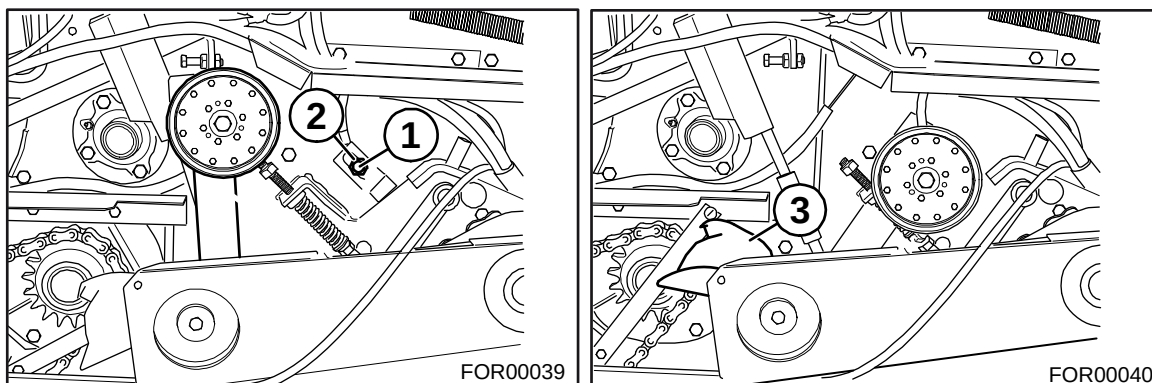


Fig. 275

The sensor "Central Position of Engine" (1) can be found on the right machine side above the V-belt and records the data for the position of the servomotor centre.

Setting:

1. Loosen the counter nut (2)
2. Adjust the sensor (1) in the oblong hole in that way that the link (3) stops in the shown position when the tension roller moves from the top to the bottom.
3. Tighten the counter nut (2)

15.9.4 Sensor Position Blade Shaft (Machines with Cutting Device)

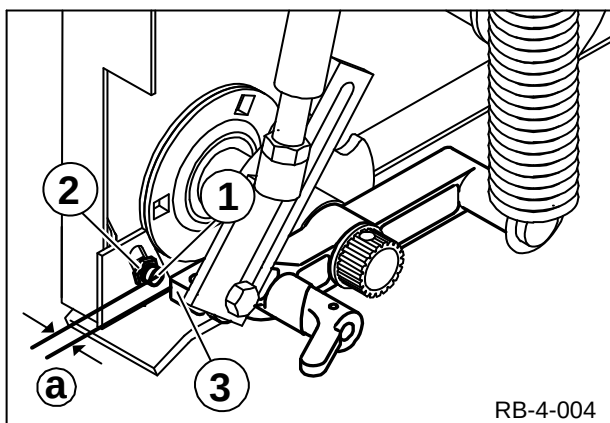


Fig. 276

The position blade shaft sensor (1) can be found on the right machine side on the blade shaft.

Setting:

1. Loosen the counter nut (2)
2. Set the sensor (1) in a distance of $a = 2 \text{ mm}$ to the lever (3) (lever swivelled upwards).
3. Tighten the counter nut (2)

The height of the sensor (1) can also be adjusted. Adjust the sensor in that way that the sensor in the sensor test can be recognised as alive.

Maintenance

15.9.5 Sensor Net Tying Mechanism

Fortima F 1250 (MC) / F 1600 (MC)

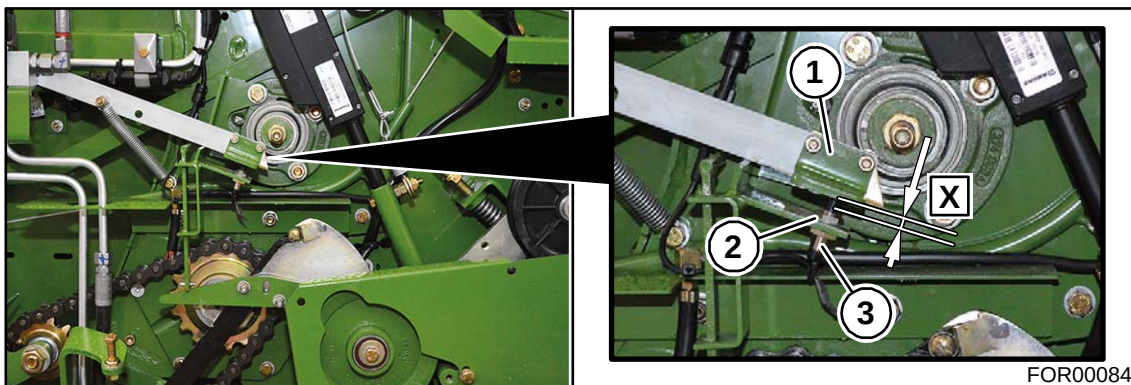


Fig. 277

The sensor (3) of net tying mechanism is located on the right-hand machine side behind the side guard. Distance x between sensor (3) and spring rail (1) must be **approx. 2 mm**.

When distance x is not right, set the sensor (2):

- Loosen counter nut (2).
- Set the sensor (3) so that the distance is $x = 2 \text{ mm}$ when the spring rail (1) is put down.
- Tighten counter nut (2).

15.9.6 Bale Firmness Sensor

Fortima F 1250 (MC) / F 1600 (MC)

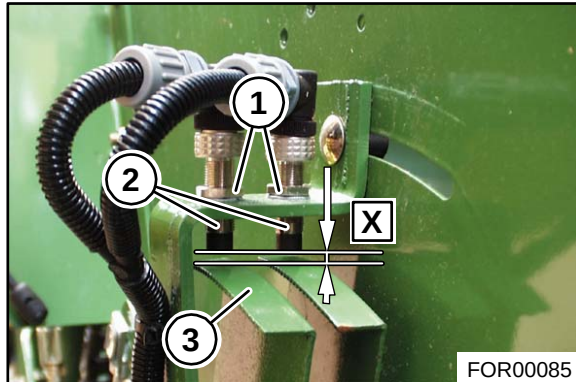


Fig. 278

The sensors (2) of bale firmness are located on the right-hand machine side behind the side guard. The distance x between sensors (2) and segment (3) must be **approx. 2 mm**.

If distance x is not correct, set the sensors (2):

- Loosen counter nuts (1).
- Set the sensor (2) so that the distance is $x = 2 \text{ mm}$.
- Tighten counter nuts (2).

Maintenance

15.10 Tightening torques

15.10.1 Metric Thread Screws with Control Thread



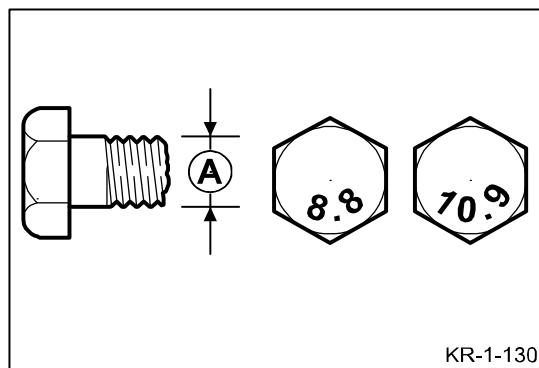
NOTICE

The table does not apply to countersunk screws with hexagonal socket in case the countersunk screw is tightened via hexagonal socket.

Tightening torque in Nm (unless otherwise stated)

A	Stability class			
	5.6	8.8	10.9	12.9
	Tightening torque (Nm)			
M4		3.0	4.4	5.1
M5		5.9	8.7	10
M6		10	15	18
M8		25	36	43
M10	29	49	72	84
M12	42	85	125	145
M14		135	200	235
M16		210	310	365
M20		425	610	710
M22		571	832	972
M24		730	1050	1220
M27		1100	1550	1800
M30		1450	2100	2450

A = thread size
(stability class can be seen on screw head)



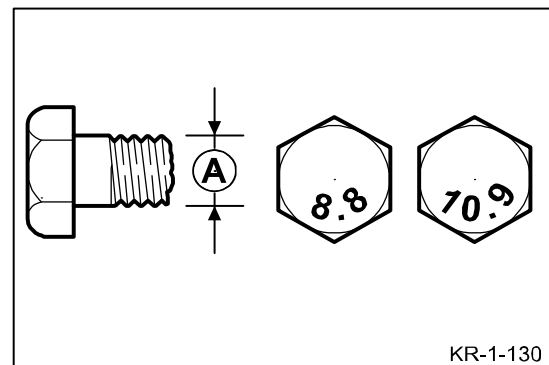
15.10.2 Metric Thread Screws with Fine Thread

Tightening torque in Nm (unless otherwise stated)

A	Stability class			
	5.6	8.8	10.9	12.9
	Tightening torque (Nm)			
M12 x 1.5:		88	130	152
M14 x 1.5		145	213	249
M16 x 1.5		222	327	382
M18 x 1.5		368	525	614
M20 x 1.5		465	662	775
M24 x 2		787	1121	1312
M27 x 2		1148	1635	1914
M30 x 1.5		800	2100	2650

A = thread size

(stability class can be seen on screw head)



15.10.3 Metric Thread Screws with Countersunk Head and Hexagonal Socket



NOTICE

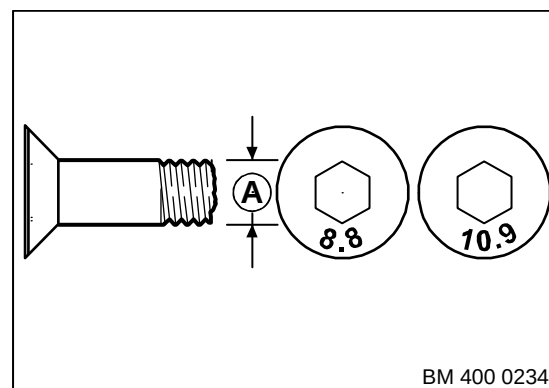
The table applies only to countersunk screws with hexagonal socket and metric thread which are tightened via hexagonal socket.

Tightening torque in Nm (unless otherwise stated)

A	Stability class			
	5.6	8.8	10.9	12.9
	Tightening torque (Nm)			
M4		2.5	3.5	4.1
M5		4.7	7	8
M6		8	12	15
M8		20	29	35
M10	23	39	58	67
M12	34	68	100	116
M14		108	160	188
M16		168	248	292
M20		340	488	568

A = thread size

(stability class can be seen on screw head)



Maintenance

15.11 Drawbar

- Shut down and safeguard the machine, see chapter Safety -> Safety routines, "Shutting down and safeguarding the machine".

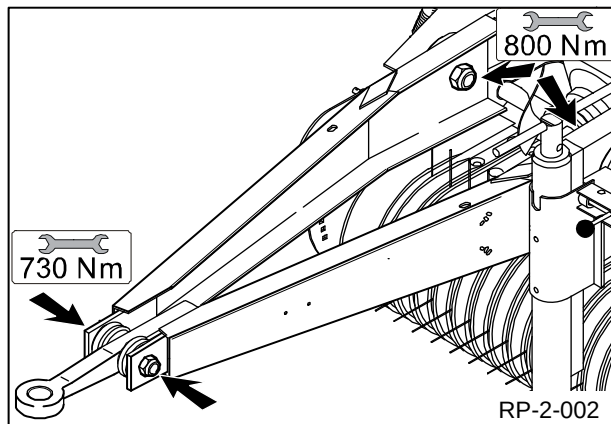


Fig. 279

- Retighten the screws after 10 operating hours.
- Check the screws every 50 operating hours.

15.11.1 Hitches on the Drawbar

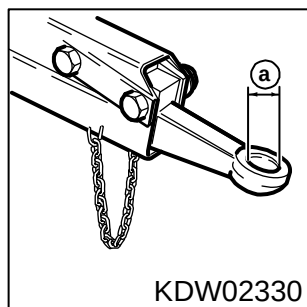


Fig. 280



Caution!

If the wear limit of the socket in the towing ring has been reached, it must be replaced. Work on the drawbar must only be performed by trained professionals.

The wear limit of the socket in the towing ring (1) is **a = 43 mm**. If this value is exceeded, the socket must be replaced. To minimise wear, clean the socket and towing ring daily and lubricate them with grease.



Note

The towing ring should be coupled always horizontally in the towing hitch. Observe the correct combination of towing ring and towing hitch (observe the specifications on the type plate!)

15.12 Main gearbox

The main gearbox is located in the front crossbeam of the round baler.

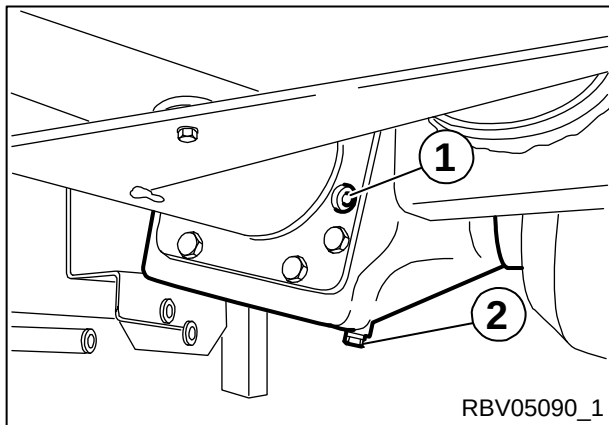


Fig. 281

- 1) Inspection screw / control hole 2) Drain plug

15.12.1 Oil Level Check and Oil Change on Main Gearbox



Note

Perform oil level check and change the oil while the machine is in a horizontal position!

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.

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.
-



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.

15.12.2 Oil Level Check and Oil Change Intervals (Gearboxes)



Note - oil level check and oil change (gearboxes) and lubricating the machine

Effect: Long expected service life of machine

- Oil change on all gearboxes after 30 to 50 operating hours and then after every season.
 - Oil level check each time before using and no later than after about 500 pressed round bales.
 - Compliance with the changing intervals is absolutely essential for bio-degradable oils because of ageing of the oils.
-

15.13 Drive chains

WARNING! – Danger of entanglement in the drive chains!

Effect: Risk of injury caused by entanglement of loose long hair or loose clothing.

- After working on the chains, always reassemble or close the safety devices.

All work chains, with the exception of those on the double twine guide, are supplied with oil through the central chain lubrication system.

Since the lubricating oil lines are not charged with high pressure, it may happen that they become clogged. Because of this, the lubricating oil lines should be checked daily before they are used to ensure they are working properly.

The method of operation of the central chain lubrication system is explained in section "**Default settings and operation**".

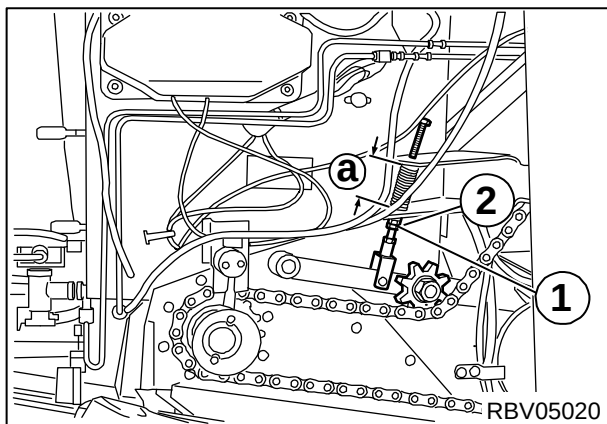
15.13.1 Tensioning the Drive Chains


Fig. 282

Front Floor Conveyor Drive

The front floor conveyor drive is located on the left side of the machine.

To check the chain tension:

The length of the spring when tightened must be $a = 80 - 90 \text{ mm}$

To correct the chain tension:

- Unscrew the counter nut (1).
- Turn the nut (2) until dimension $a = 80 - 90 \text{ mm}$ is set.
- Tighten the counter nut (1).

Maintenance

Fortima V 1500 (MC) / V 1800 (MC)

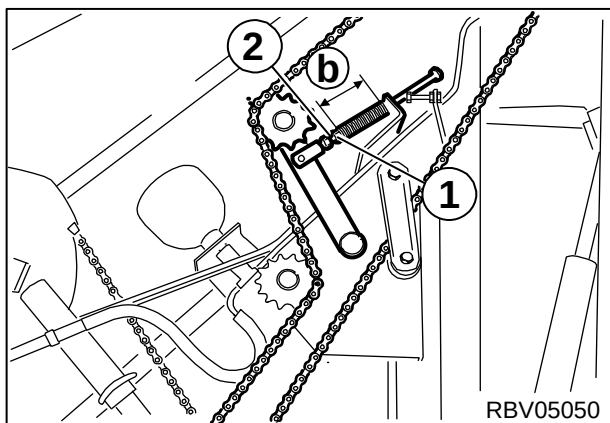


Fig. 283

Rear floor conveyor drive

The rear floor conveyor drive is located on the left side of the machine.

To check the chain tension:

The length of the spring when tightened must be $b = 90 \text{ mm}$

To correct the chain tension:

- Unscrew the counter nut (1).
- Turn the nut (2) until dimension $b = 90 \text{ mm}$ is set.
- Tighten the counter nut (1).


WARNING! – Crush hazard!

Effect: Foot injuries.

- Lower pick-up to the ground.

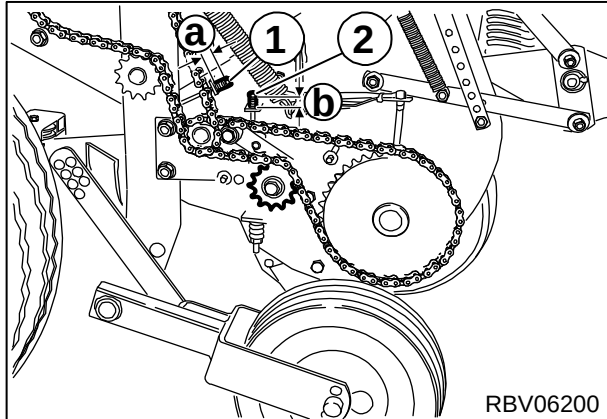
Pick-up


Fig. 284

Main drive pick-up

The main drive is located on the pick-up on the right side of the machine.

To check the chain tension:

The length of the spring when tensioned must be $a = 30 \text{ mm}$.

To correct the chain tension:

- Turn the nut (1) until the dimension $a = 30 \text{ mm}$ is set.

Drive pick-up

The drive pick-up is located on the pick-up on the right side of the machine.

To check the chain tension:

The length of the spring when tensioned must be $b = 30 \text{ mm}$.

To correct the chain tension:

- Turn the nut (2) until the dimension $b = 30 \text{ mm}$ is set.

Maintenance

Fortima F 1250 (MC) / F 1600 (MC)

Roller drive

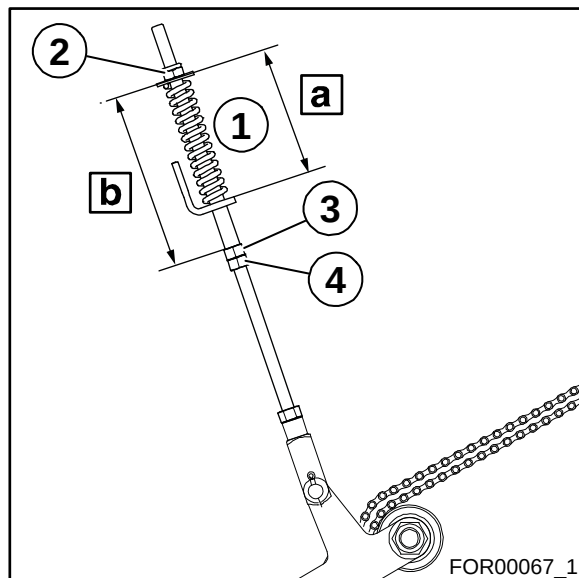


Fig. 285

The roller drive is located on the right-hand machine side.

Checking/setting the compression spring (1):

- Check whether dimension (a) is 90 mm.
- For setting, turn the nut (2) until the dimension is reached.

Then:

- Check whether dimension (a) is 170 mm.
- For setting, turn the nut (3) until the dimension is reached and lock with nut (4).

Auger conveyor drive

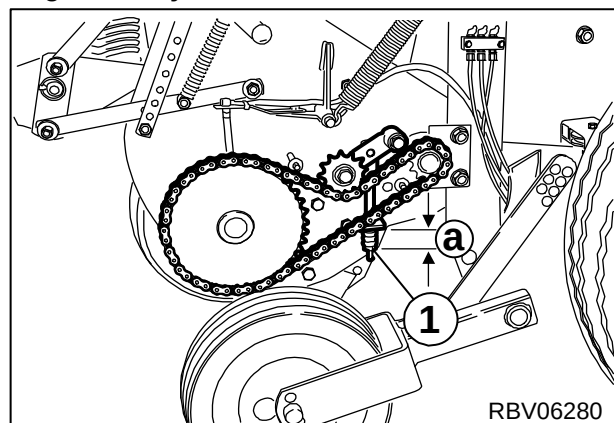


Fig. 286

The auger conveyor drive is located on the pick-up on the left side of the machine.

To check the chain tension:

The length of the spring when tensioned must be $a = 30$ mm.

To correct the chain tension:

- Turn the nut (1) until the dimension $a = 30$ mm is set.

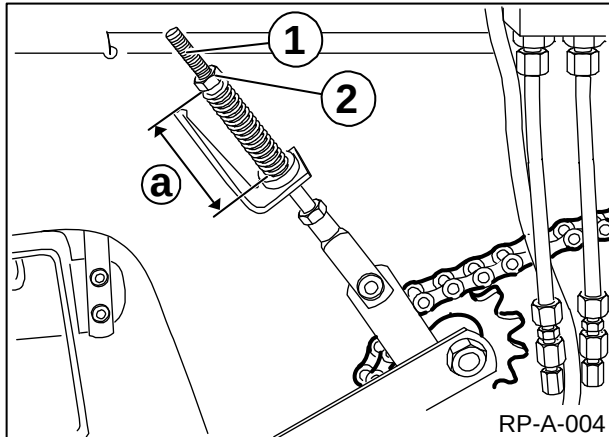
Fortima V 1500 (MC) / V 1800 (MC)
Roller drive


Fig. 287

The roller drive is located on the right side of the machine.

To check the chain tension:

The length of the spring when tensioned must be $a = 90$ mm.

To correct the chain tension:

- Turn the nut (2) until the dimension $a = 90$ mm is set.

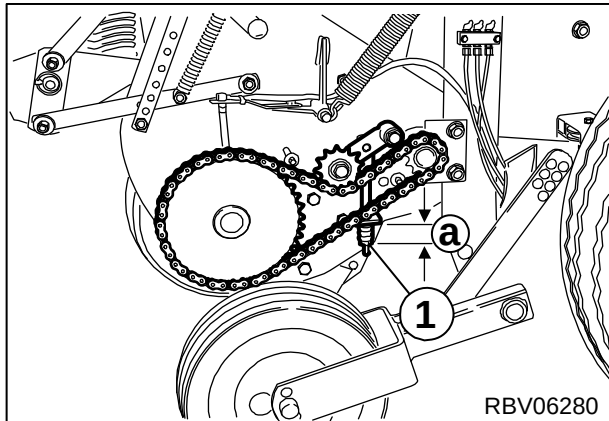
Auger conveyor drive


Fig. 288

The auger conveyor drive is located on the pick-up on the left side of the machine.

To check the chain tension:

The length of the spring when tensioned must be $a = 30$ mm.

To correct the chain tension:

- Turn the nut (1) until the dimension $a = 30$ mm is set.

Maintenance

Cutting system drive

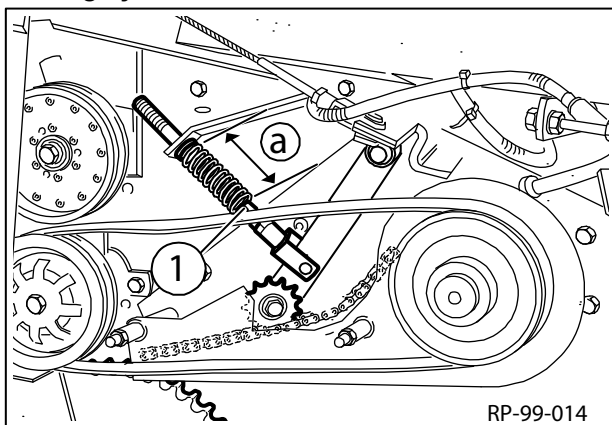


Fig. 289

The cutting system drive is located on the right side of the machine.

To check the chain tension:

The length of the spring when tightened must be $a = 80 - 90$ mm.

To correct the chain tension:

- Turn the nut (2) until the dimension $a = 80 - 90$ mm is set.

Fortima F 1250 (MC) / F 1600 (MC)
Floor Conveyor Tension

The floor conveyor tensioner is located right and left on the rear bale chamber housing below the rear side guards.

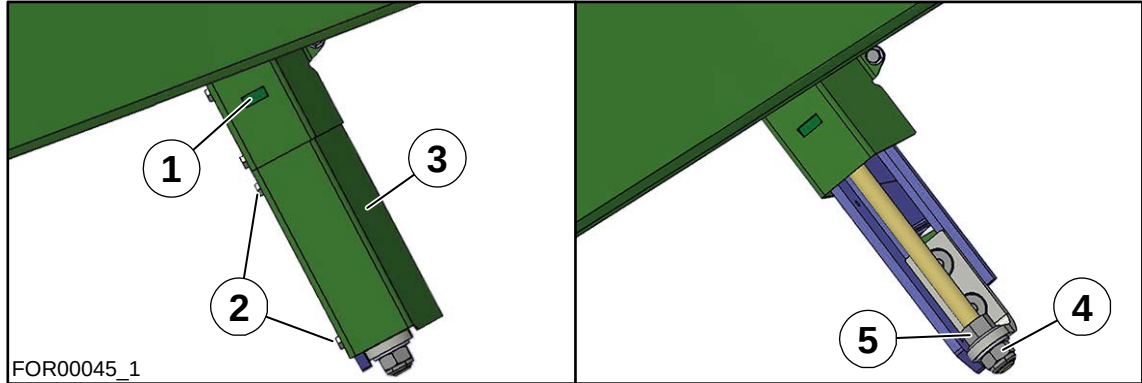


Fig. 290


Note

A yellow marking can be seen in the plate cut out (1) when the new machine is delivered. The green marking can be seen after the floor conveyor has set down.

Checking floor conveyor tension:

The floor conveyor tension is OK if a green marking can be seen in the plate cut out (1).

The floor conveyor tension must be corrected if a red marking can be seen in the plate cut out.

Correcting floor conveyor tension (right-hand and left-hand sides of the machine):

- Unscrew screw connections (2) and remove the lower guard (3) of the tensioning device.
- Loosen counter nut (4).
- Turn nut (5) until the green marking can be seen in the plate cut out.
- Firmly tighten counter nut.
- Mount the lower guard of the clamping device.

Maintenance

15.14 Cleaning the Tensioning Arm Floor Conveyor Rear

Fortima V 1500 (MC) / V 1800 (MC)

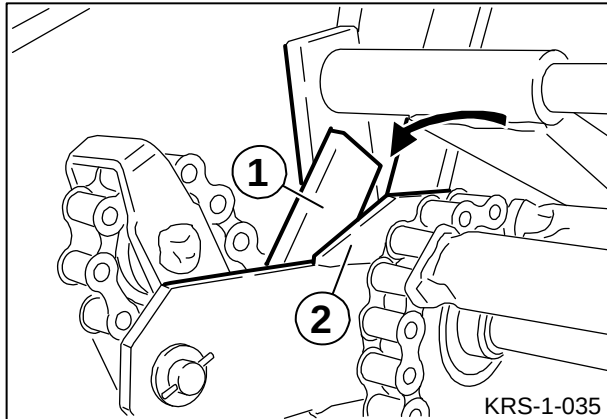


Fig. 291

If the chain tensioner of the floor conveyor chain is not working properly and the tension diminishes:

- Check whether litter or other material has set down in the gap marked by the arrow which is located between metal strut (1) and (2).
- Clean the gap, if necessary.

15.15 Shortening the floor conveyor chain

Fortima V 1500 (MC) / V 1800 (MC)

Checking the length of the rear floor conveyor chain

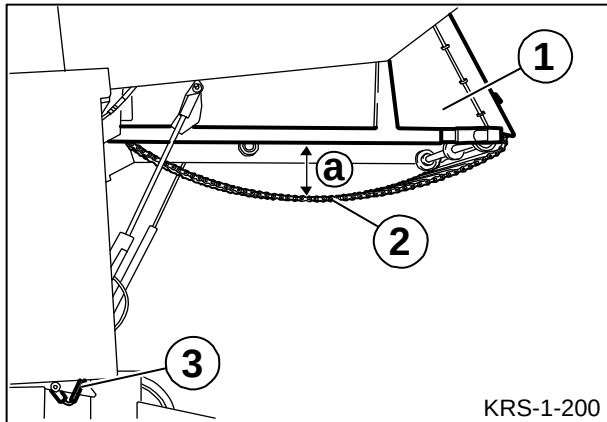


Fig. 292



Note

Before checking the chain length, the rear tension arms must be cleaned. (see chapter Cleaning the tension arm of the rear floor conveyor).

- Completely open the tailgate (1).
- Secure the tailgate with the shut-off valve (3) (see chapter Shut-off valve for tailgate).



DANGER! – Settings on the machine!

Danger to life or serious injuries.

- The shut-off valve on the left hydraulic cylinder must be closed.
- Check the distance "a" between the tailgate (1) and roller chain. If the distance is greater than 220 mm, shorten the roller chain.
- Release the tension on the floor conveyor (see chapter Control block front right).

Maintenance

Shortening the rear floor conveyor chain

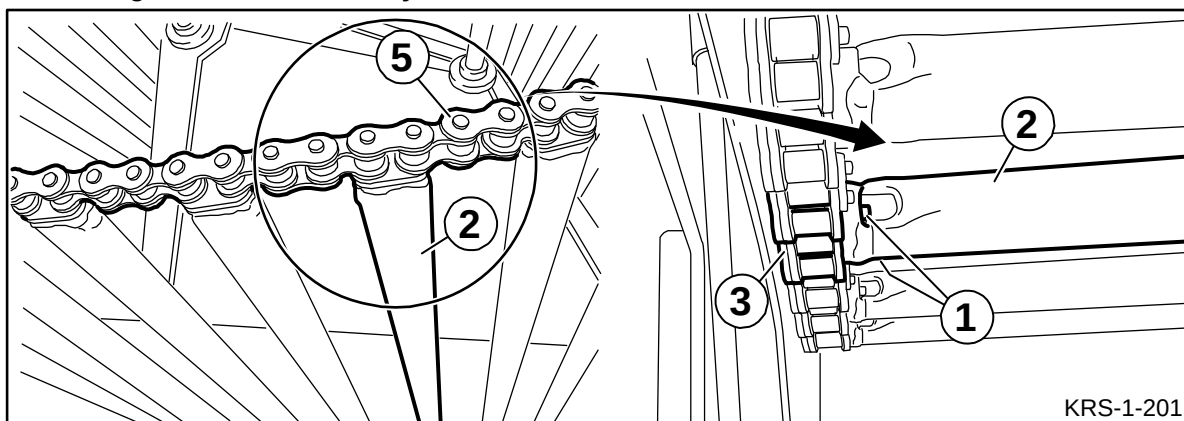


Fig. 293

- Remove the wire pins (1) on either side.
- Remove the strip (2).
- Remove two chain links (3) from the floor conveyor chain (5).
- Connect the floor conveyor chain (5) with a chain lock.

Shortening the front floor conveyor chain

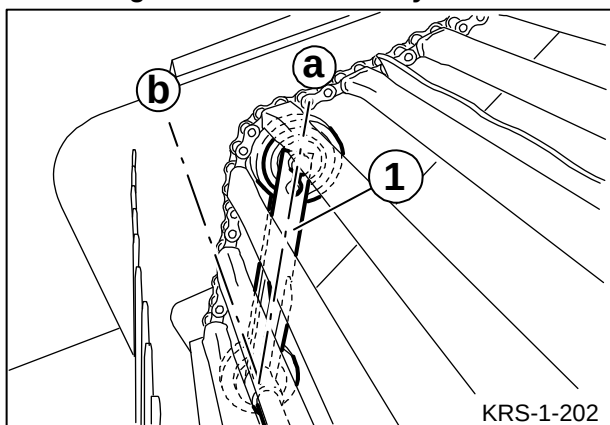


Fig. 294

- Move the chain tension lever to position "b".
- Shorten the front floor conveyor chain as described in chapter "Shortening the rear floor conveyor chain".
- Move the chain tension lever to position "a".

15.16

Tyres



Warning! - Tyre fitting incorrect

Effect: Injuries or damage to the machine

- Fitting tyres requires sufficient knowledge and the availability of proper tools!
- If tyres are not correctly fitted, it could explode when pumped up. This can cause serious injury. If you do not have sufficient experience of fitting tyres, have tyres fitted by the KRONE dealer or a qualified tyre specialist.
- When fitting tyres on the wheel rims, the maximum pressure given by the tyre manufacturer must not be exceeded. The tyre or even the wheel rim could explode and/or burst.
- If the tyre heels do not fit properly when the maximum permitted pressure is reached, let out the air, align tyres, lubricate the tyre heels and pump up the tyre again.
- Detailed information about how to fit tyres onto agricultural machinery can be obtained from the tyre manufacturers.

Maintenance

15.16.1 Checking and maintaining tyres

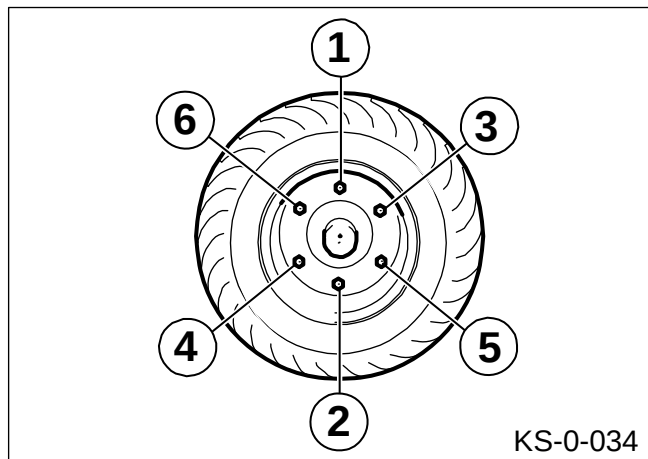


Fig. 295

When loosening and tightening the wheel nuts, observe the order indicated in the illustration. 10 operating hours after they have been mounted, check the wheel nuts and retighten them if necessary. After that, check them every 50 operating hours to make certain they are tight. Check the tyre pressure at regular intervals and refill if necessary. The tyre pressure depends on the size of the tyres. The values are listed in the table.

Tightening Torque

Threading	Key size in mm	Number of bolts per hub - pieces	Max. tightening torque	
			black	galvan.
M12 x 1.5	19	4/5	95 Nm	95 Nm
M14 x 1.5	22	5	125 Nm	125 Nm
M18 x 1.5	24	6	290 Nm	320 Nm
M20 x 1.5	27	8	380 Nm	420 Nm
M20 x 1,5	30	8	380 Nm	420 Nm
M22 x 1.5	32	8/10	510 Nm	560 Nm
M22 x 2	32	10	460 Nm	505 Nm

15.16.2 Tyre air pressure

Check the tyre pressure at regular intervals and refill if necessary. The tyre pressure depends on the size of the tyres. The values are listed in the table.

Fortima F 1250 (MC) / Fortima F 1600 (MC)

Tyre type	Single axle		
	Air pressure (bar)		
	min.	recommended *	max.
	V max = 10 km	V max = 40 km	
15x6.00-6 PR	-	-	3.2
11.5/80-15.3 10 PR	1.5	2.8	4.7
15.0/55-17 10 PR	1.0	2.0	3.7
19.0/45-17 14 PR	1.0	1.5	3.7
500/50-17 10 PR	1.0	1.5	2.7

Tyre type	Tandem axle		
	Air pressure (bar)		
	min.	recommended *	max.
	V max = 10 km	V max = 40 km	
15x6.00-6 PR	-	-	3.2
11.5/80-15.3 10 PR	1.0	1.5	4.7
15.0/55-17 10 PR	1.0	1.5	3.7
19.0/45-17 14 PR	1.0	1.5	3.7

*) This recommendation applies especially to the typical mixture of operation (field/road) at the maximum permitted machine speed.

If necessary, the tyre air pressure can be reduced to the minimum air pressure. However, the associated maximum speed must then be observed.

Maintenance

Fortima V 1500 (MC) / V 1800 (MC)

Tyre designation	Single axle		
	Tyre pressure (bar)		
	min.	recommended *	max.
	V max = 10 km	V max = 40 km	
15x6.00-6 PR	-	-	3,2
11.5/80-15.3 10 PR	2,8	4,0	4,5
15.0/55-17 10 PR	2,6	2,6	3,6
19.0/45-17 14 PR	2,8	2,8	3,8
500/50-17 10 PR	1,0	1,5	2,5

Tyre designation	Tandem axle		
	Tyre pressure (bar)		
	min.	recommended *	max.
	V max = 10 km	V max = 40 km	
15x6.00-6 PR	-	-	3,2
11.5/80-15.3 10 PR	1,0	2,0	4,5
15.0/55-17 10 PR	1,0	1,5	2,8
19.0/45-17 14 PR	1,0	1,5	2,8

- *) This recommendation applies especially to the typical mixture of operation (field/road) at the maximum permitted machine speed.

If necessary, the tyre air pressure can be reduced to the minimum air pressure. However, the associated maximum speed must then be observed.



15.17 Brakes

- Shut down and safeguard the machine, see chapter Safety -> Safety routines, "Shutting down and safeguarding the machine".

15.17.1 Checking the brake setting

Natural wear of the brake drum and brake pad makes it necessary to readjust the wheel brakes frequently to maintain the full stroke of the brake cylinder. To achieve good speed reduction from braking, the air gap between the lining and brake drum must be kept as small as possible.

Maintenance

15.17.2 Adjusting the cam brake

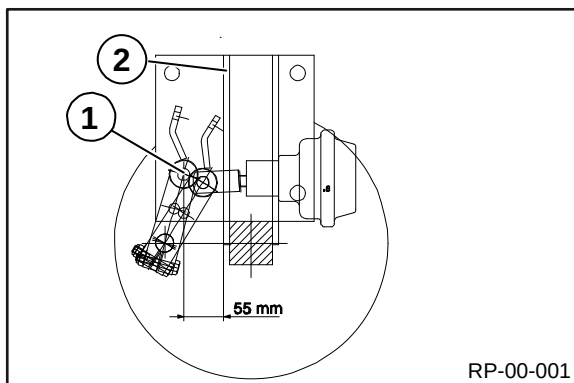


Fig. 296

Single axle - compressed air system

At approx. 6 bar of compressed air the brake lever (1) must be located approx. 55 mm from the plate (2) in brake position.

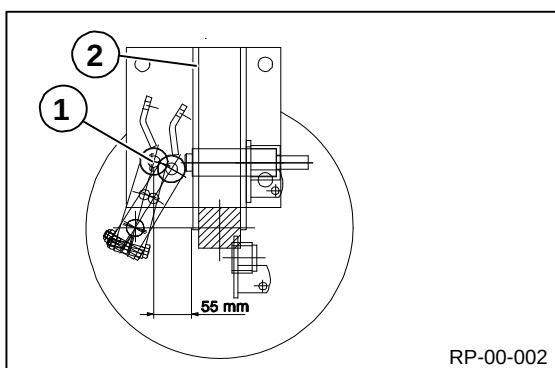


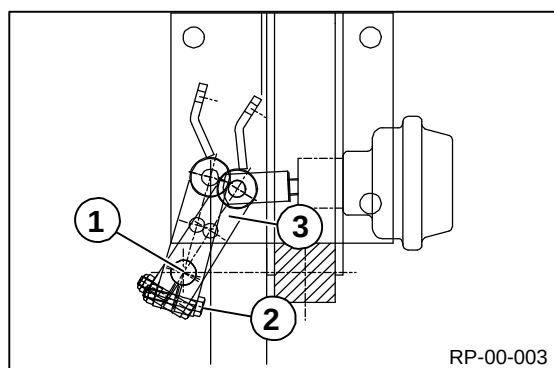
Fig. 297

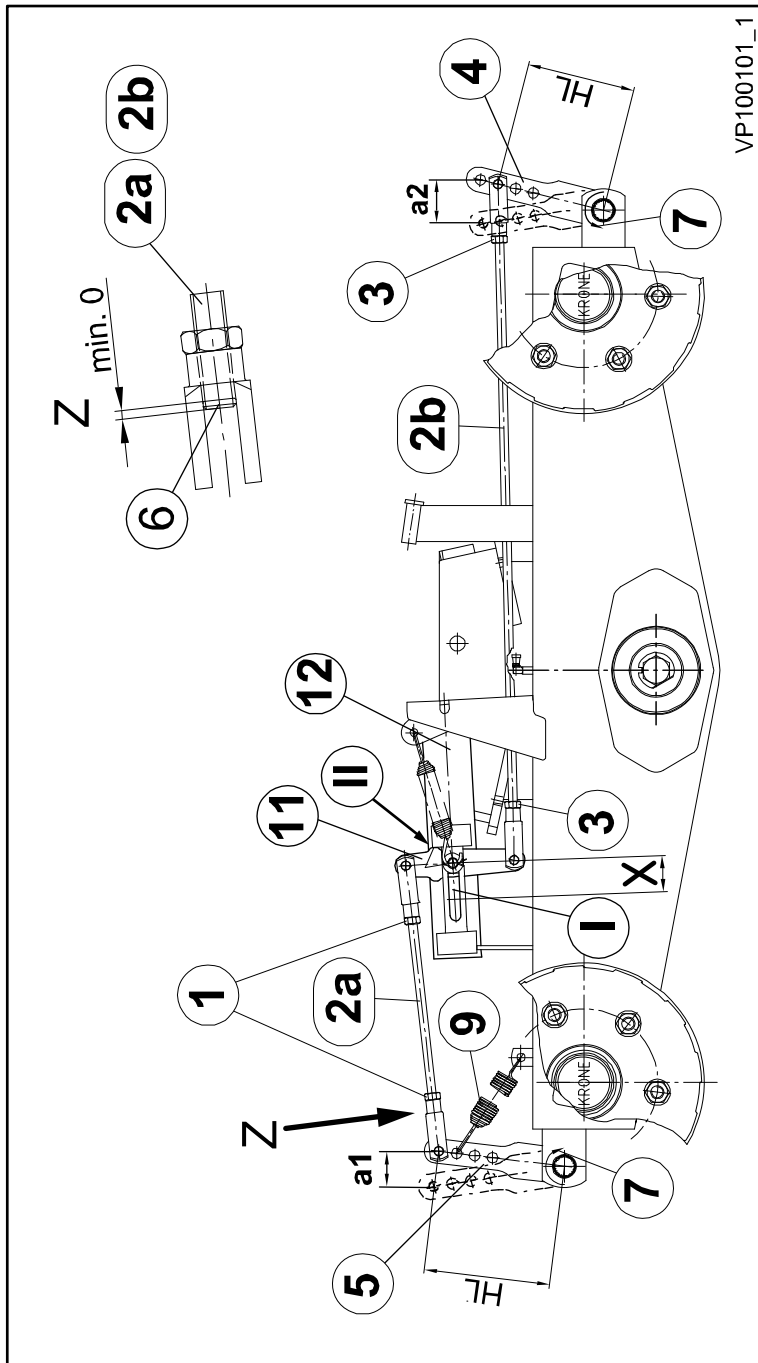
Single axle - hydraulic brake

At approx. 100 bar of oil pressure the brake lever (1) must be located approx. 55 mm from the plate (2) in brake position.

This setting can be adjusted on the profile of the brake shaft (Fig. RP-00-003):

1. Remove the snap ring (1) and push the brake shaft in as far as possible.
2. Loosen the screw (2).
3. Remove the brake lever (3) and adjust.
4. Tighten the screw (2).
5. Install the snap ring (1).



Adjusting the brake activation

Fig. 298

Note

The brake activation has been adjusted in the factory.

The brake must be readjusted:

- if the braking effect diminishes (for example due to wear on the brake shoes)
- if the activation path of the brake cylinder "X" is greater than 50 mm.

Maintenance



Note

Each time before you readjust the brake linkage (2a, 2b), the thickness of the lining on the brake shoes must be checked. The thickness of the lining must still be at least 2 mm.

1. Disconnect the brake linkage (2b) from the brake lever (4).
 2. Loosen the counter nuts (1) on the brake linkage (2a).
 3. Turn the brake linkage (2a) until the brake lever path a1 is about 30 mm on activation.
-



Note

The compensation lever (11) must be flush both in the oblong hole (I), and in the upper part (II) of the support (12) for the following settings.

4. Disconnect the brake linkage (2a) from the brake lever (5).
 5. Then mount the brake linkage (2b) on the brake lever (4) again (note the length of the brake lever (RL)).
 6. Loosen the counter nuts (3) on the brake linkage (2b)
 7. Turn the brake linkage (2b) until the brake lever path a2 is about 30 mm on activation.
 8. Then mount the brake linkage (2a) on the brake lever (5) again (note the length of the brake lever (RL)).
 9. Activate the brake. When you do this, the cylinder stroke X must be between 25 mm and 50 mm.
-



Note

If the cylinder stroke X is too great, readjust the brake linkage (2a and 2b) (increase the length of the brake linkage).

After the brake linkage (2a, 2b) has been readjusted, check whether

- the wheels turn freely when the brake is released. If they do not, the brake linkage (2a, 2b) must be readjusted (shorten the brake linkage),
 - until the threading overhang (6) of the brake linkage (2a, 2b) on the clevises is min.=0 mm.
If the minimum threading length (6) (min. = 0 mm) cannot be reached, the brake lever (4, 5) should be moved on the brake shafts against the operating direction (7).
10. Tighten counter nuts (1, 3) on the brake linkages (2a, 2b).
-



Note

Make certain that all safety equipment is mounted.

15.18 Maintenance – brake system (special equipment)



WARNING!

If the basic safety instructions are not followed, people may be seriously injured or killed.

- To avoid accidents, the basic safety instructions in the chapter Safety must have been read and followed, see chapter Safety "Basic safety instructions".



WARNING!

If the safety routines are not adhered to, people may be seriously injured or killed.

- To avoid accidents, the safety routines in the chapter Safety must be read and followed, see chapter Safety "Safety routines".



WARNING!

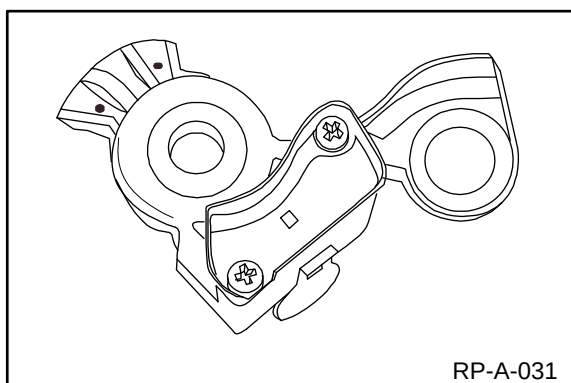
Risk of injury resulting from damage to the brake system

Damage to the brake system may impair the operational safety of the machine and cause accidents. As a result, people may be seriously injured or killed.

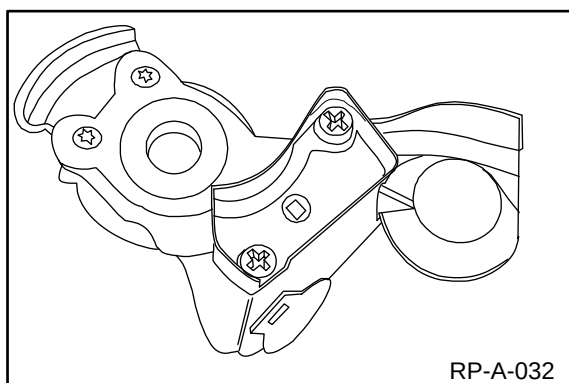
- Adjustment and repair work on the brake system must only be performed by authorised professional workshops or recognised brake services.
- Have the brakes checked regularly by a specialist workshop.
- Have damaged or worn brake hoses replaced immediately by a specialist workshop.
- Irregularities or malfunctions in the brake system must be rectified immediately by a specialist workshop.
- Only a machine with an intact brake system may be used for work in the field or for travelling on roads.
- No changes may be made to the brake system without the approval of KRONE.
- KRONE is not responsible for natural wear, defects caused by overload or changes made to the brake system.

Maintenance

15.18.1 Coupling heads (non-interchangeable)



"RESERVOIR" coupling head (**colour red**)



"BRAKE" coupling head (**colour yellow**)

Fig. 299

The coupling heads are installed in the dual-line compressed air braking system to connect the reservoir and brake line of the tractor with the machine.

- After uncoupling, close the cover or connect the coupling heads in the empty couplings provided for this purpose so that no dirt can get in them.
- Replace damaged sealing rings.
- Check whether the coupling heads lock into place and make certain there are no leaks.
- Replace faulty heads.

15.18.2 Air filter for pipelines

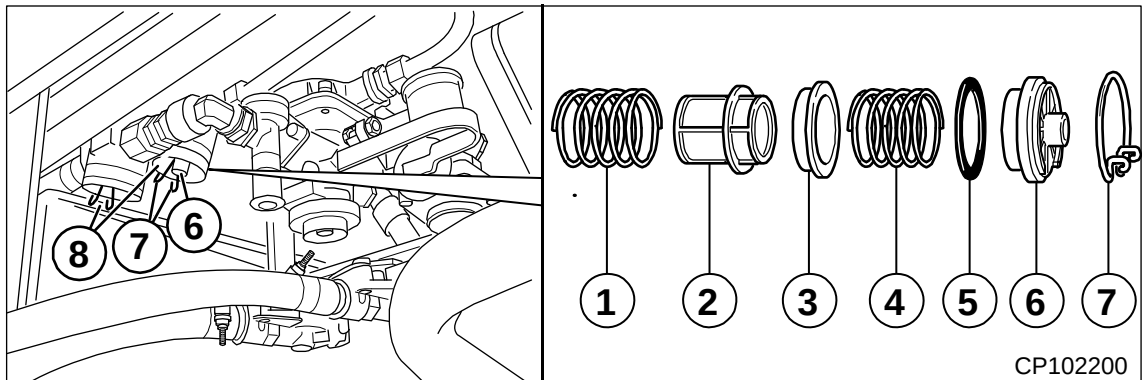


Fig. 300

- | | | |
|------------|------------------|------------------------|
| (1) Spring | (4) Spring | (7) Clasp locking ring |
| (2) Filter | (5) Sealing ring | |
| (3) Spacer | (6) Cover cap | |

The air filter (8) cleans the compressed air and protects the brake system from malfunctions.



Note

The brake system is ready for operation even when the filter insert is clogged in both directions of flow.

Removing the Filter Insert

- Press cover cap (6) and loosen the clasp locking ring (7)
- Remove the filter insert

Maintenance of the Air Filter

Clean the filter insert before the beginning of the season.

Installation of the filter insert

Installation is in reverse order to removal.



Note

Observe the correct sequence when assembling the filter insert.

Maintenance

15.18.3 Compressed-air reservoir

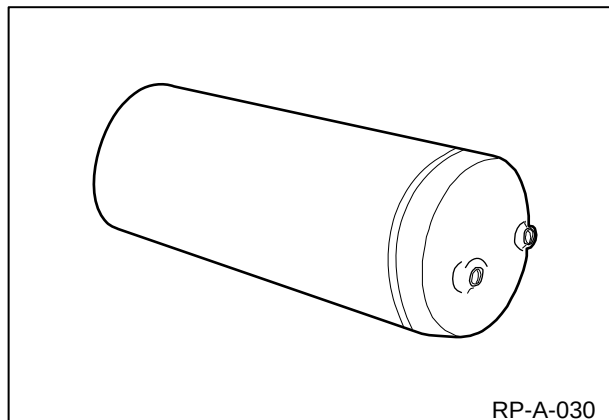


Fig. 301

The compressed-air reservoir stores the compressed air that is pumped by the compressor. Therefore condensation water may settle in the compressed air reservoir during operation. The compressed-air reservoir must be emptied regularly. Specifically, it must be emptied:

- daily in winter (when being used),
- otherwise weekly and
- at least after 20 operating hours.

The drain valve on the bottom of the compressed-air reservoir is used for draining.

- Switch off and secure the machine.
- Open the drain valve and allow the condensation to run out.
- Check the drain valve, clean it and screw it back in.



Note

If the drain valve has a heavy accumulation of dirt or is leaking, it must be replaced by a new one.



WARNING!

Risk of injury from corroded or damaged compressed air reservoirs.

Damaged or corroded compressed air reservoirs may burst and cause serious injuries.

- Observe the inspection intervals according to the maintenance table, see chapter Maintenance Engine "Maintenance table".
- Have damaged or corroded compressed air reservoirs replaced immediately by a service centre.

15.19 Hydraulics



DANGER! – Risk of injury caused by hydraulic oil spraying out!

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

- Before working on the hydraulic system, reduce the pressure. Hydraulic oil escaping under high pressure can cause severe injuries. In the event of injuries, find a physician immediately. There is danger of infection.
- Work on the hydraulic system, especially on the pressure accumulators, must only be performed by trained and authorised personnel.
- The pressure accumulator must only be filled with the gas intended for it.



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.



WARNING! – Hydraulic hose lines are subject to ageing

Effect: Danger to life or serious injuries

The characteristics of the lines change depending on pressure, heat load and the effect of UV rays.

The date of manufacture appears on the hydraulic hoses. This way the age can be ascertained quickly.

By law the hydraulic lines must be replaced after six years.

Use original spare parts when replacing hydraulic hoses!

Maintenance

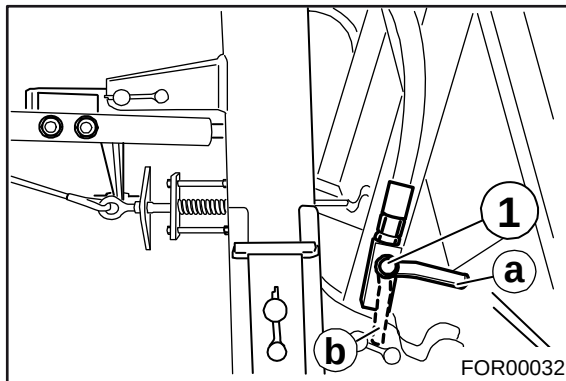


Note

- When working on the hydraulic system, absolute cleanliness is essential
- Check the hydraulic oil level each time before placing the machine in operation
- Observe the intervals for replacing the hydraulic oil and hydraulic oil filter
- The used oil must be disposed of correctly

15.19.1 Shut-off valve for tailgate

Fortima V1500 (MC)/V1800 (MC)



Fortima F1250 (MC)/F1600 (MC)

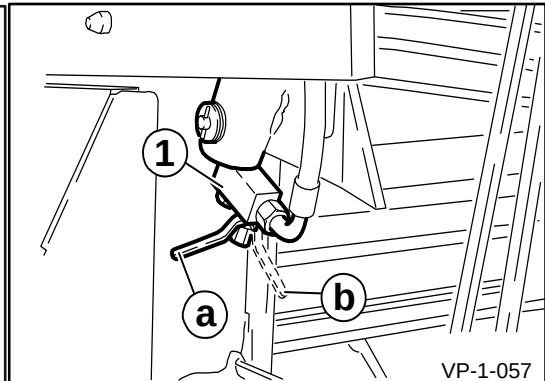


Fig. 302

Pressure is supplied to the machine hydraulics through hoses from the tractor. Along with various parts, the shut-off valve (1) on the left hydraulic cylinder should be mentioned. It is designed as a safety component to prevent the tailgate from closing unintentionally.

Position "a"

Hydraulic cylinder return locked. The tailgate cannot be closed.

Always move the shut-off valve to position "a" for work inside the bale chamber and on the open tailgate.

Position "b"

Hydraulic cylinder return opened. The tailgate can be closed.

To close the tailgate always return the shut-off valve to position "b" after working inside the bale chamber or on the tailgate.

15.19.2 Control block

Fortima V 1500 (MC) / V 1800 (MC)

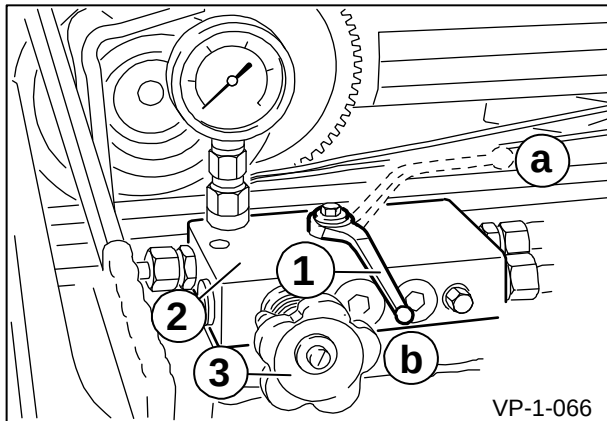


Fig. 303

The control block (2) is located on the right front side. The baling pressure is set on the handwheel (3) before starting work.

Position "a" Parking position - release pressure from the clamping cylinders.

Position "b" Work position



Note

Before starting maintenance move the shut-off valve to position "a" to relieve the clamping cylinders.

Maintenance

15.19.3 Emergency Manual Activation Electromagnetic Valves (MC Cutting System)



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.

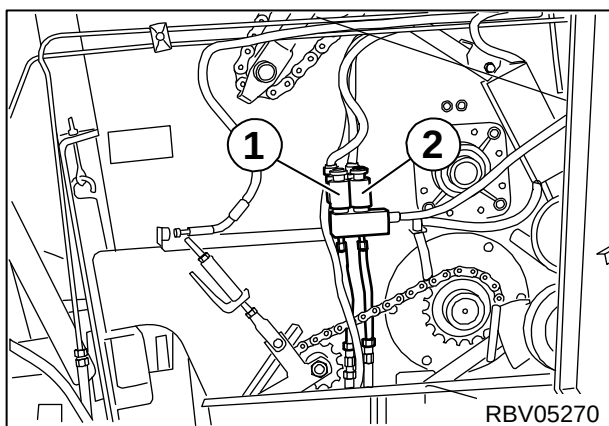


Fig. 304

The electromagnetic valves (2) are located on the right-hand side of the machine behind the guard.

An emergency hand operation of the motional function of the pick-up and the zero setting of blades can be carried out at the electromagnetic valves, if the comfort controls fails.

To do this:

- Screw in the subjacent slot screw (1) or the knurled head screw until the pick-up can be lifted or lowered directly from the position of the control valve at the tractor.



Note

As soon as the comfort controls works correctly again, the slot screw or the knurled head screw at the electromagnetic valve have to be screwed out. The operation of the pick-up via comfort controls is only ensured in this way.

15.19.4 Replacing the Hydraulic Oil Filter

Fortima V 1500 (MC) / V 1800 (MC)



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.

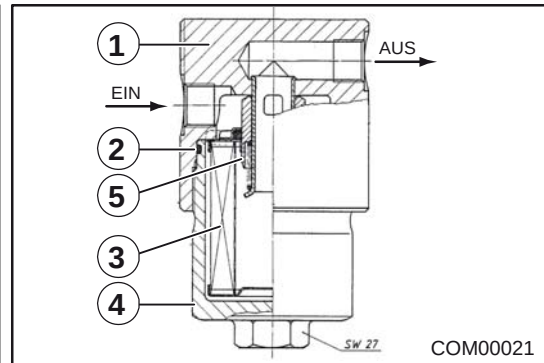
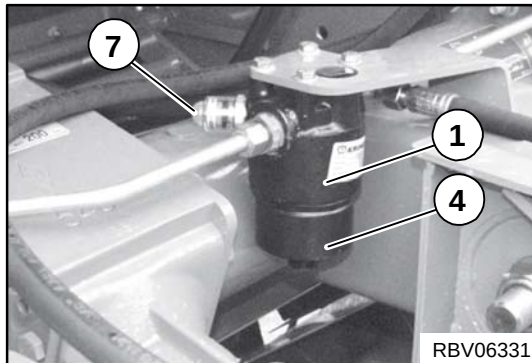


Fig. 305

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 optically about the degree of contamination of the filter.



Note

Check the contamination indicator before the machine is used. If the display field is green, the filter element is OK; if the display field is red, the filter has to be changed.

When starting in cold condition the button on the contamination indicator (7) can hop out. Only insert the button after achieving the operating temperature. In case it immediately hops out again, the filter element needs to be changed.

Maintenance

Replacing the filter element



Note

Store or dispose used oil and oil filters according to statutory provisions.

- Relieve all pressure from the hydraulic system.
- Screw the bottom of the filter (4) off the filter head piece (1) and clean it.
- Remove the filter element (3) and replace it by a new filter element (Order no. 919 730 0).
- Push a new filter element (3) onto the valve sleeve (5).
- Check the O-ring seal (2) and replace it, if necessary, by a new O-ring seal with identical characteristics.
- Screw bottom of the filter (4) back onto the filter head piece.
- Charge the hydraulic system with pressure and check for leaks.

16 Maintenance – lubrication

16.1 Special Safety Instructions



Danger! - Maintenance, installation, repair and adjustment work, troubleshooting and fault resolution

Effect: Risk of death, injuries or damage to the machine.

The following general rules apply to all maintenance, assembly, repair and adjustment work:

- Switch off the PTO shaft.
- Turn off the engine, remove the ignition key and take it with you.
- Disconnect the 12 V power supply voltage.
- Secure the machine against rolling away with wheel chocks and by applying the parking brake.
- Only start the machine if all safety devices are fitted and in sound condition.
- If any hazardous situations arise, immediately turn off the PTO shaft and stop the machine.
- Never leave the machine running with no operating personnel on the tractor.
- Avoid skin contact with oils and greases.



Environment! - Disposing of consumables and storage

Effect: Environmental damage

- Keep consumables in suitable containers according to statutory provisions.
 - Dispose of used consumables according to statutory provisions.
-

Maintenance – lubrication

16.2 Lubricants

16.3 General aspects

Depending on the design, the machine may be equipped with different lubrication systems. Soft, supply NLGI Class 2 lithium soap greases in accordance with DIN 51825 should be used as lubricating greases. We recommend that you do not use lubricating greases with any other base material.



Note

Do not use greases containing graphite! There may be problems when different greases are mixed together!

Manufacturer	Lubricants based on mineral oil	Bio-lubricants
ARAL	Long-term grease H	On request
BP	Energrease LS-EP2	
DEA	Glissando EP2	
FINA	Marson EPL 2A	
Shell	Alvania Ep2	
ESSO	EGL 3144	

Lubrication points on the machine must be lubricated at regular intervals. The position of the lubrication points and the lubrication intervals can be seen in the lubrication plans in the operating instructions. Remove the grease that comes out of the bearing points after lubrication.

16.4 Lubricating the PTO shaft

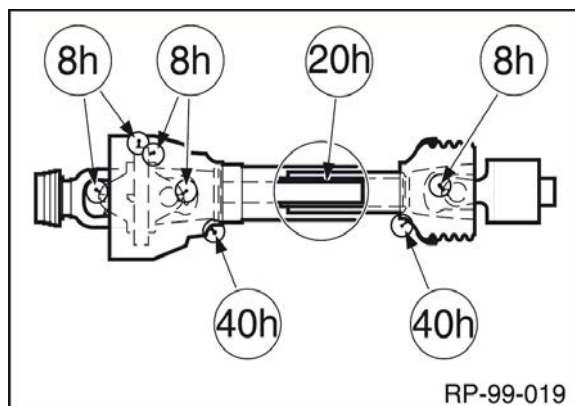


Fig. 306

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.

16.5
Lubrication points

The following tables contain a list of lubrication points on the machine and the number of lubrication nipples.

Fortima F 1250 (MC) / F 1600 (MC)

Lubrication points	Number of grease nipples
Support jack	1
Floor conveyor inside front	2
Cylinder for tailgate (right + left)	2
Tailgate bearing (right + left)	2
Floor conveyor deflection rear	2
Tandem axle pendulum arm bearing (right + left)	2
Floor conveyor shaft bearing (right)	1
Spiral roller bearing (right)	1
Nipple block left:	
Cutting system bearing	1
Floor conveyor drive (bearing)	1
Spiral roller bearing	1
Nipple block right:	
Cutting roller	1
Intermediate gear inside	1
Intermediate gear outside	1
Chain drives:	
Floor conveyor drive (left)	Central lubrication *
Pick-up drive (right + left)	
Roller drive (right)	
Cutting system drive (right)	
Floor conveyor chain (left + right)	

* special equipment

Maintenance – lubrication

Left Machine Side

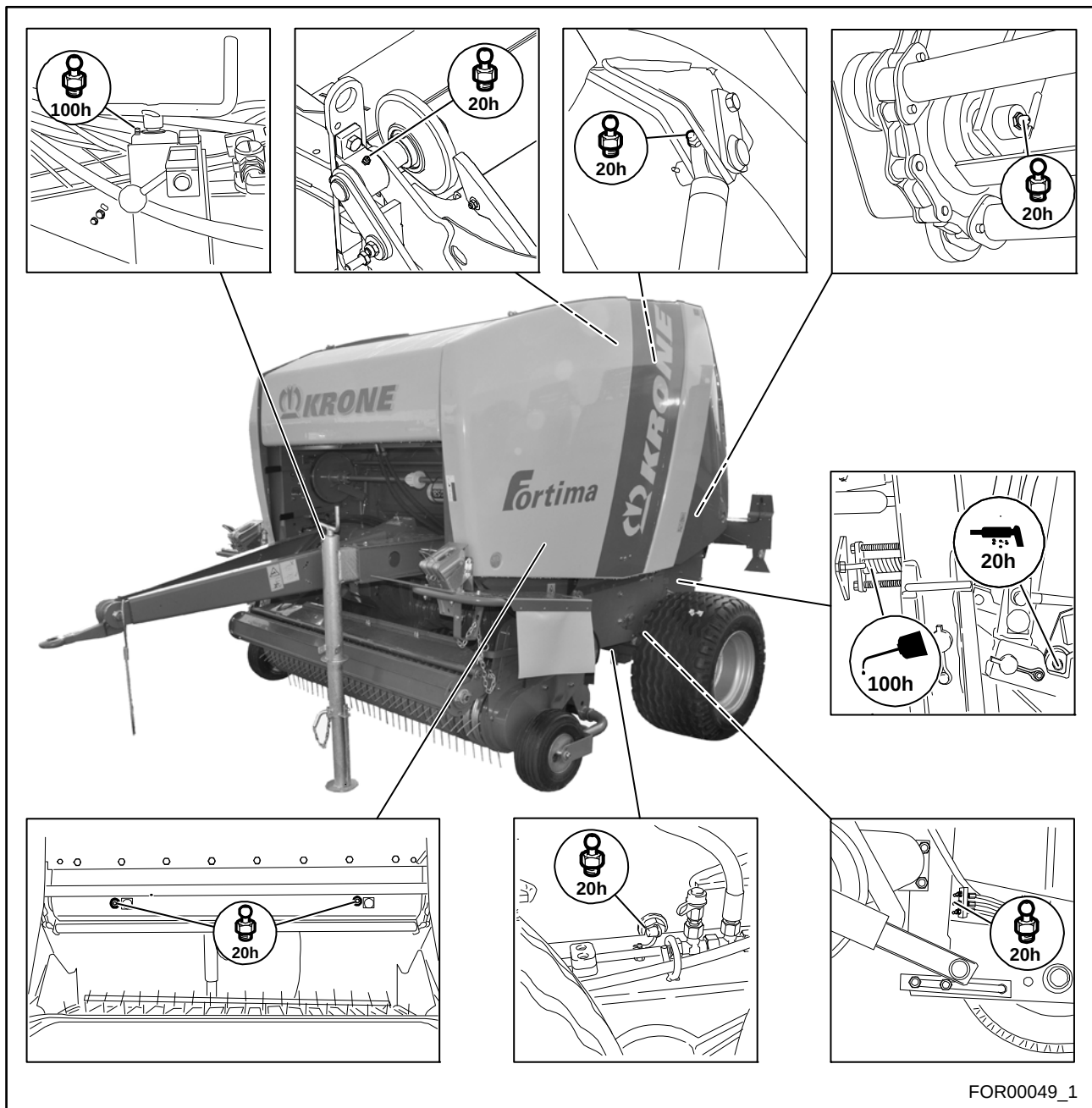


Fig. 307

Right Machine Side

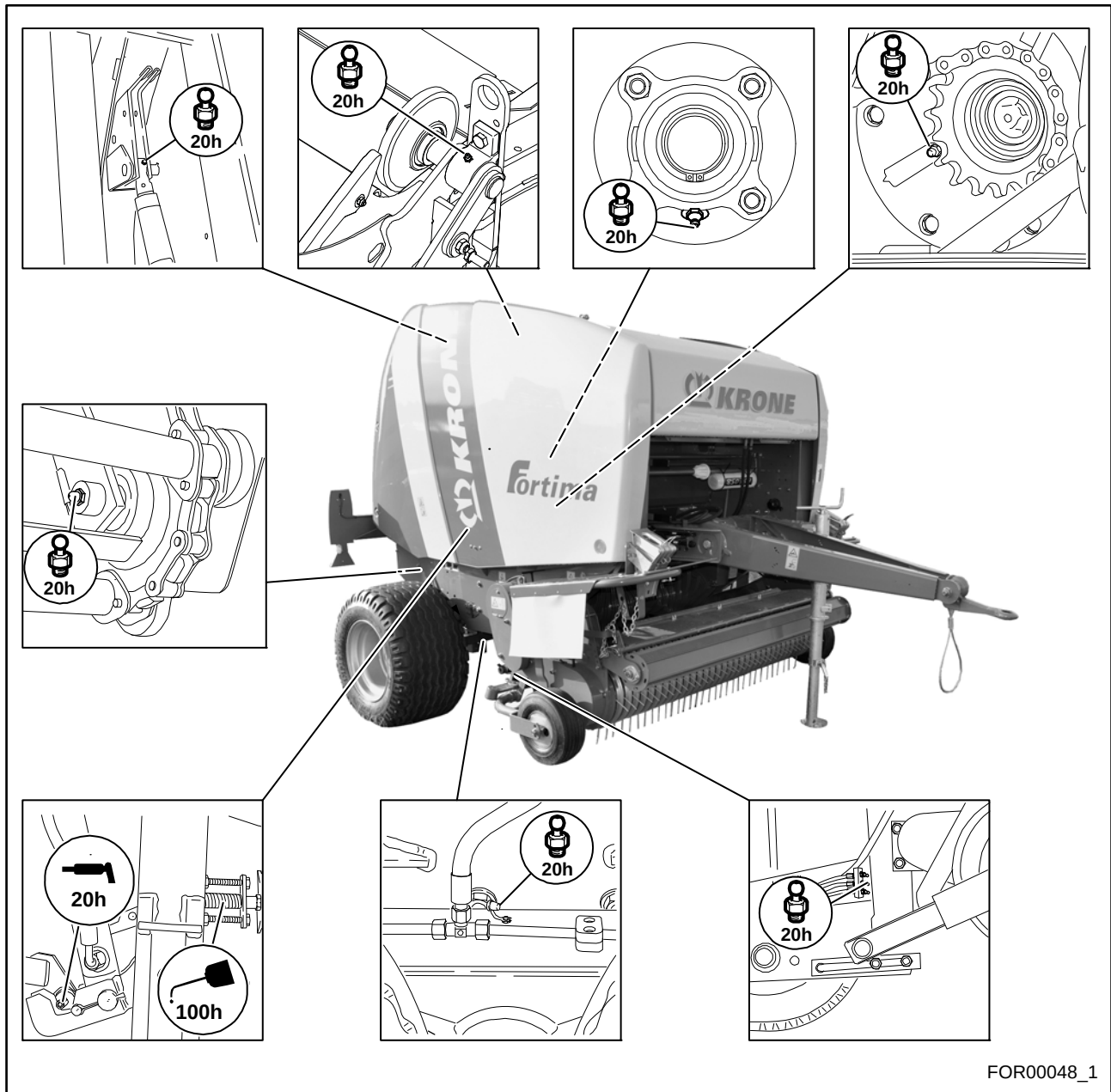


Fig. 308



Maintenance – lubrication

Fortima V 1500 (MC) / V 1800 (MC)

Lubrication points	Number of grease nipples
Parking jack	1
Drive shaft and bearing of rear floor conveyor (right + left)	5
Deflection shaft top front on the tensioning system (right + left)	2
Cylinders for tailgate (right + left)	2
Tandem axle pendulum arm bearing (right + left)	2
Floor conveyor shaft bearing (right)	1
Spiral roller bearing (right)	1
Nipple block left: Cutting system bearing Floor conveyor drive (bearing) Spiral roller bearing	1 1 1
Nipple block right: Cutting roller Intermediate gear inner Intermediate gear outer	1 1 1
Chain drives: Floor conveyor drive left Pick-up drive right and left Roller drive right Cutting system drive right Floor conveyor chain left and right	Central lubrication

Left Machine Side

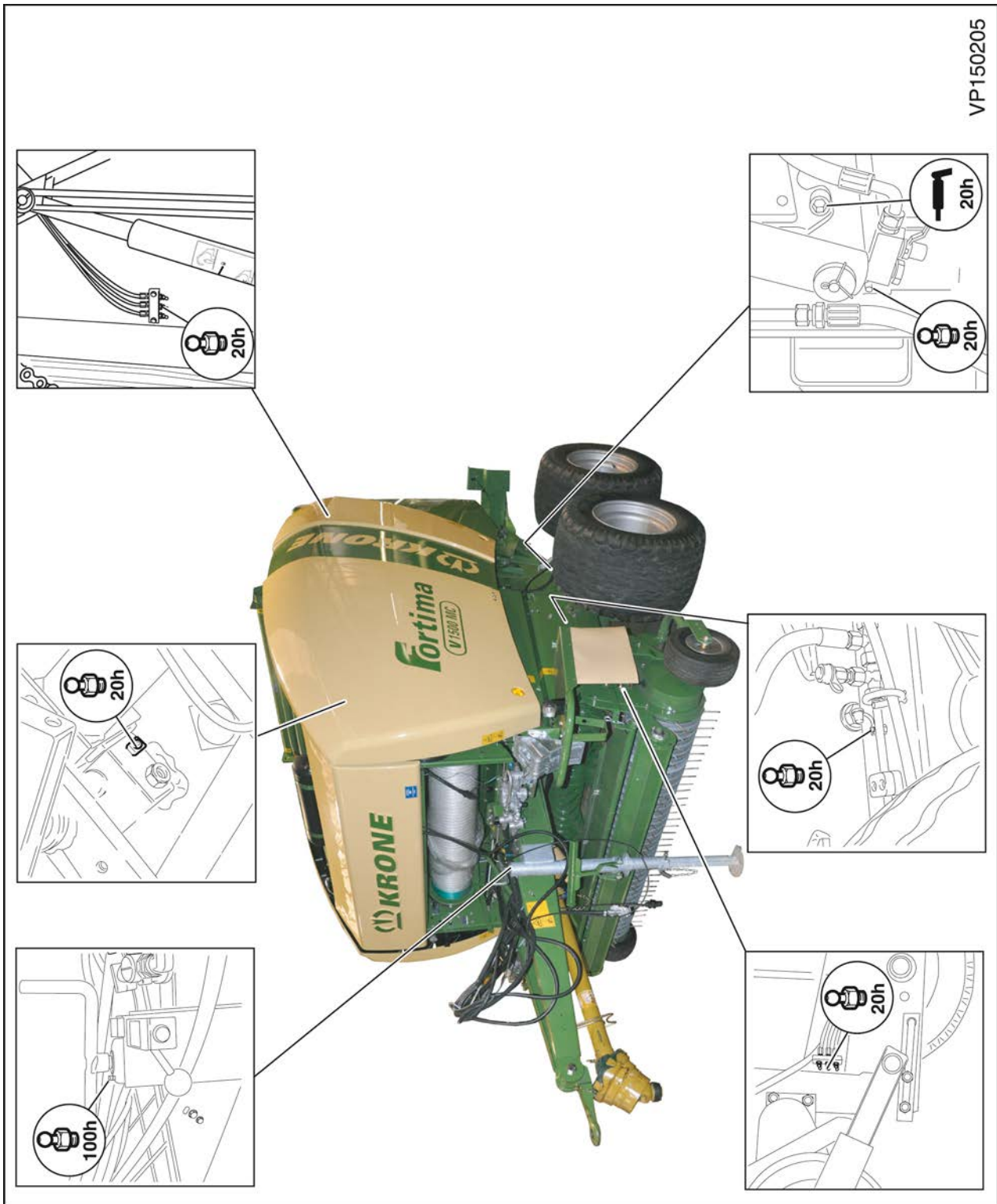


Fig. 309

Maintenance – lubrication

Right Machine Side

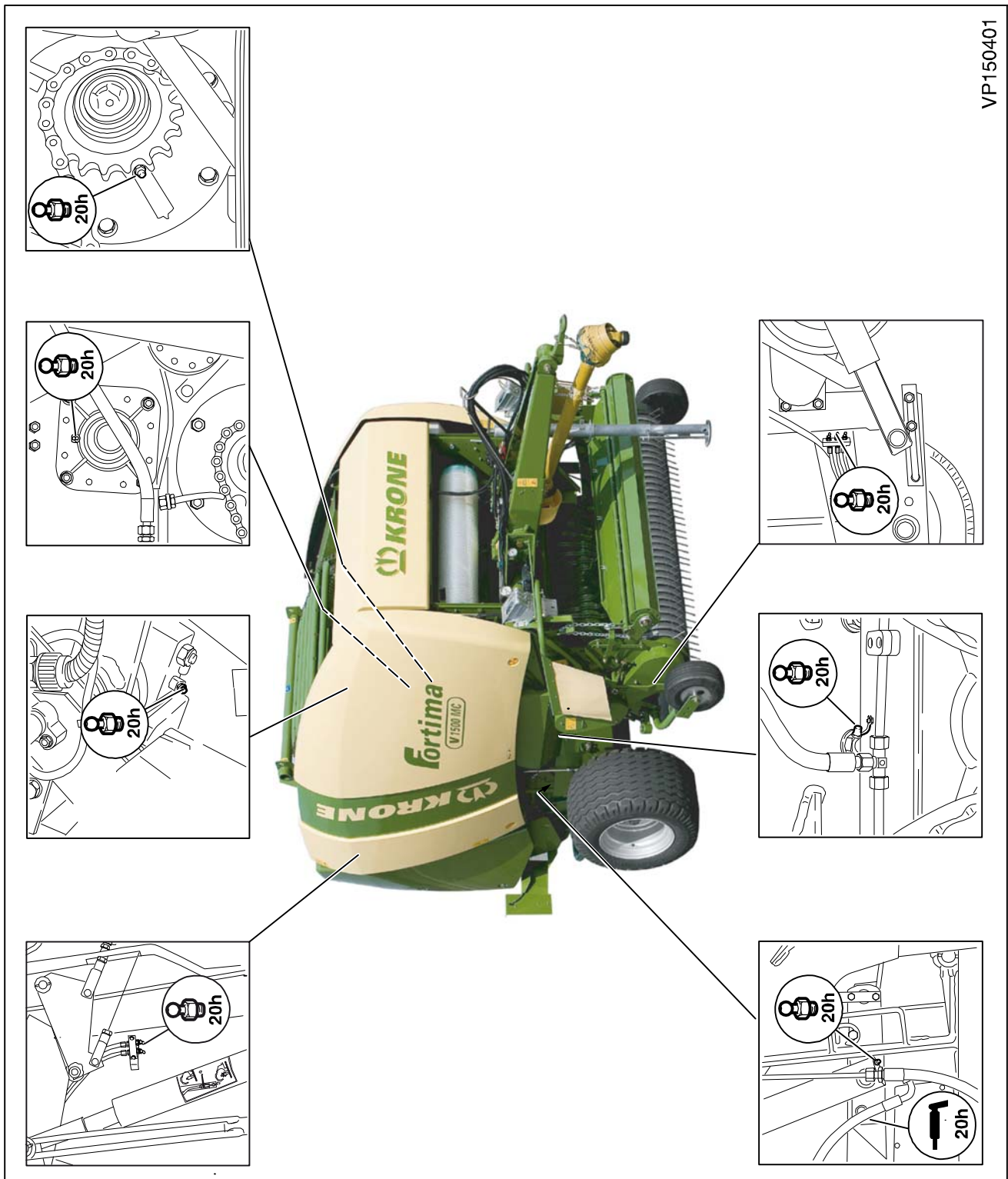


Fig. 310

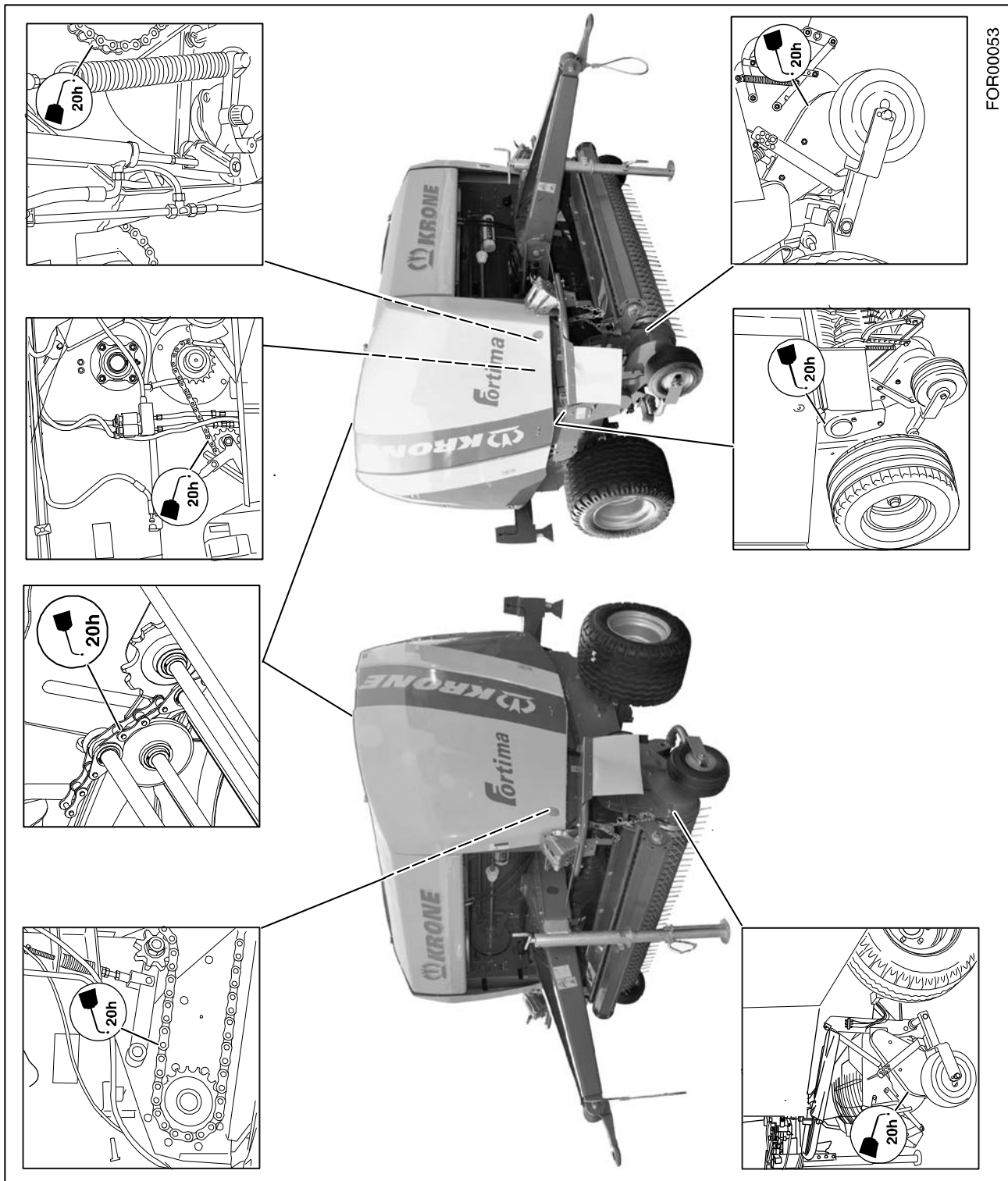
16.5.1 Chain Lubrication System

Fortima F 1250 (MC) / Fortima F 1600 (MC)



Note

The following lubrication points must only be lubricated if there is no central lubrication available.



FOR00053

Fig. 311

Placing in Storage

17 Placing in Storage



WARNING!

If the basic safety instructions are not followed, people may be seriously injured or killed.

- To avoid accidents, the basic safety instructions in the chapter Safety must have been read and followed, see chapter Safety "Basic safety instructions".



WARNING!

If the safety routines are not adhered to, people may be seriously injured or killed.

- To avoid accidents, the safety routines in the chapter Safety must be read and followed, see chapter Safety "Safety routines".

17.1 At the End of the Harvest Season

Before placing the machine in winter storage, clean it inside and outside thoroughly. To do this, use a high-pressure cleaner. Do not hold the stream of water directly on the bearing points. After cleaning is completed, lubricate all grease nipples. Do not wipe off any grease that comes out of bearing points. The hardened grease will provide additional protection against moisture. Check chains and sprocket wheels for wear. Oil and tighten cleaned chains.

Check all movable parts such as deflection rolls, joints, tensioning rolls, etc. to make certain they move easily. If necessary, dismount, clean, grease and remount. If necessary, replace with new parts.

Only use original KRONE spare parts.

Disassemble the universal shaft. Lubricate the inner tubes and the guard tubes with grease. Grease the lubrication nipples on the universal joint and grease the bearing rings of the protective tubes.

Park the machine in a dry location, but not in the vicinity of artificial fertilisers or livestock buildings. Repair places with damaged paint and preserve all bare metal places thoroughly with rust protection agent.



Caution!

The machine should only be placed on blocks with a suitable vehicle lifting device. Make certain that the machine is stable and safe when it is on blocks.

To remove load from the tyres, set the machine on blocks. Protect the tyres against external influences such as oil, grease and direct sunlight, etc.

Perform the necessary repair tasks during the time immediately after the harvest season. Draw up a list of all spare 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.

17.2

Before the Start of the New Season



DANGER! - During repair, maintenance, cleaning work or technical interventions on the machine, drive elements can start moving.

Effect: Risk of death, injuries or damage to the machine.

- Turn off the tractor engine, remove the ignition key and take it with you.
 - Disconnect the 12 V power supply voltage.
 - Secure the machine and tractor against rolling.
 - Turn off and disengage the PTO shaft
 - After repair, maintenance, cleaning work or technical interventions on the machine, replace all protective covers and safety devices correctly.
 - Avoid oil, grease, cleaning agents and solvents coming into contact with the skin.
 - Hydraulic fluids escaping at high pressure can cause severe injuries. In the event of injuries or burns due to oils, cleaning agents or solvents, contact a physician immediately.
 - To prevent injury and accidents, follow all safety instructions.
-
- Before placing the machine in service again, trigger a tying or wrapping process and run through it manually. As you do, check the functions of the starting devices of the tying or wrapping process.
 - Grease all lubrication points and oil the chains. Wipe away grease that comes out of lubrication points.
 - Check the oil level in the main drive gearbox and top up if necessary.
 - Check hydraulic hoses and lines for leaks and replace them 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.
 - Check the operating functions.
 - Re-read the operating instructions thoroughly.

Placing in Storage

17.2.1 Maintenance work before the beginning of the new season

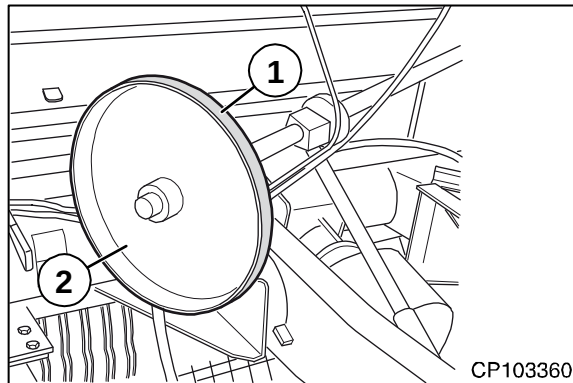


Fig. 312

- Clean the rust off the brake disc (2) on the running surface (1).

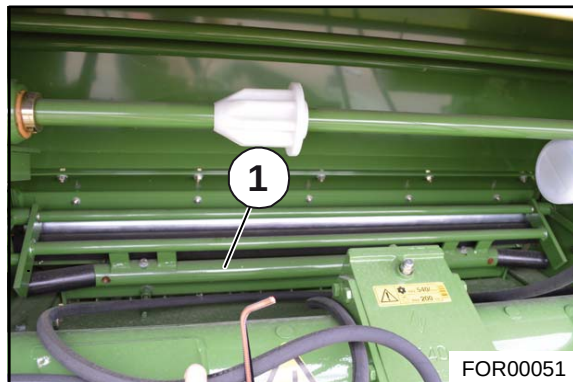


Fig. 313

- Remove the grill on the spreading bracket (1) (for net tying).

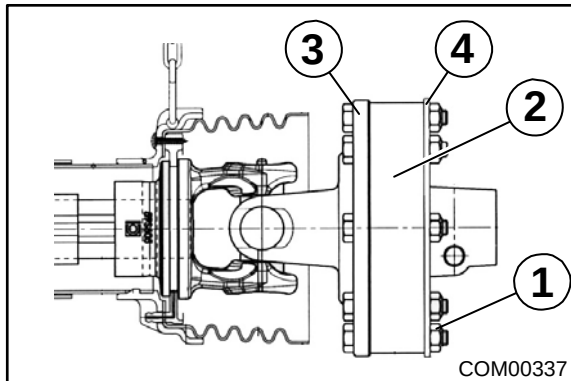
17.2.2 Venting the overload coupling on the PTO shaft**Friction clutch only**

Fig. 314

Following extended downtimes, overload coupling surfaces (2) may stick to the contact surfaces.

Vent the overload coupling before use.

- Loosen the eight screws (1) to release the spring pressure from the outside washers (3, 4).
- Turn the PTO shaft manually.
- Tighten the screws until the covering ring (2) is lying directly against the outside washers (3, 4).

**Note**

Do not tighten the screws (1) too tight. The coupling must still be able to slip.

- Then turn the screws (1) one sixth of a revolution back.

Malfunctions - Causes and Remedies

18 Malfunctions - Causes and Remedies

18.1 Special Safety Instructions



DANGER! - During repair, maintenance, cleaning work or technical interventions on the machine, drive elements can start moving.

Effect: Risk of death, injuries or damage to the machine.

- Turn off the tractor engine, remove the ignition key and take it with you.
- Secure the machine and tractor against rolling.
- Turn off and disengage the PTO shaft.
- With the tailgate open, secure it against being lowered by adjusting the stop cock.
- After repair, maintenance, cleaning work or technical interventions on the machine, replace all protective covers and safety devices correctly.
- Avoid oil, grease, cleaning agents and solvents coming into contact with the skin.
- Hydraulic fluids escaping at high pressure can cause severe injuries. In the event of injuries or burns due to oils, cleaning agents or solvents, contact a physician immediately.
- To prevent injury and accidents, follow all safety instructions.



Malfunctions - Causes and Remedies

18.2 General malfunctions

Malfunction	Possible cause	Remedy
Pick-up cannot be lowered.	Hydraulic hose is not inserted.	Insert hydraulic hose into the appropriate coupling.
Blockages in the feed area. In case of blockages, stop immediately and turn off the PTO shaft as the floor conveyor strips can be damaged otherwise. Remove blockages.	Swaths are of uneven height or too large.	Divide swaths.
	Travelling speed too high.	Reduce travelling speed. Slow down at the beginning of the baling process until the picked up crop rolls in the bale chamber.
	The machine is not hitched horizontally.	Hook in machine higher at the front. Adjust drawbar height so that the transfer from the pick-up to the channel is more even.
The transfer of short crop from pick-up to cutting roller is poor.	The machine is too low at front.	Hook in machine higher at the front. Adjust drawbar height so that the transfer from the pick-up to the channel is more even.
The wrapping material tears in the middle if the bales are barrel-shaped.	The bale chamber is filled unevenly.	Drive over the swath on alternate sides.
	The number of wrappings is too low.	Increase number of wrappings.
	Net brake is too tight.	Loosen net brake.
	Net spreader is aggressive.	Adjust wide spreader.
	Floor conveyor switches too late.	Change switching time.
Bale is formed conically.	The bale chamber is filled one-sided.	Make sure when baling that the bale chamber is filled evenly. Slow down especially at the end of the bale.
	Speed is too high at the end of baling process.	Slow down at the end of baling process.
	Twine or wrapping material torn.	Just use twine or wrapping material of specified quality.
	The number of wrappings is not sufficient. Twine or wrapping material loosens.	The tying distance of twine tying system must be set closer or the number of wrappings of the wrapping material must be increased.
When starting, twine is not shot in.	Pressure rollers on the starter are too stiff.	Oil bearing or slightly loosen screw on pressure rollers and lock them again.
Twine slips off the bale edges.	Crop is very dry and crumbly.	Position twine limiter on tying unit further to the inside.
Twine guide slide of double tying is not transported.	Chain of double tying is too loose.	Retighten chain with chain tensioner.
Net tears off directly after starting process or during the wrapping process.	Blade bar has fallen down again immediately after starting process.	Remove impurities.
	Setting of roller brake is too strong.	Check setting of braking device.
	Blade bar is too low.	Check blade bar setting.

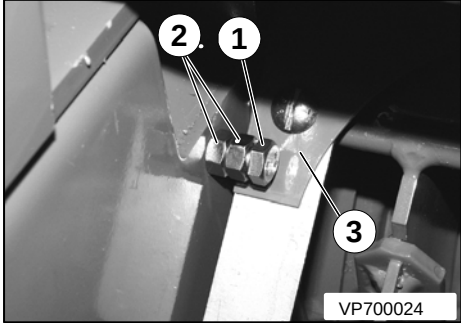


Malfunctions - Causes and Remedies

Malfunction	Possible cause	Remedy
Net is not transported during starting process.	The dimensions of the net are incorrect.	Just use net rollers with prescribed dimensions.
	The tension wheel is not pressed against the V-belt or the freewheel jams in the coupling wheel.	Check setting motor or make freewheel move smoothly. Remove any potentially available soilings.
	Net rollers are not inserted correctly in the collecting mechanism and / or the roller braking device is not set correctly.	Insert net roll according to operating instructions. Set roller brake.
	Net has not been inserted correctly in the wrapping device.	Pull the net out of the film wrapping device and reinsert it in accordance with the operating instructions.
	Impurities in front of the starter rollers and on the starter rollers may cause the net to slip through.	When the twine tying device has been used for a longer period of time, remove accumulations of dirt in the wrapping mechanism.
	Channel is blocked with straw.	Remove cutting blade and clean it.
	The tension roller of the V-belt is not able to move downward far enough.	Remove crop between guard support and flat bar from the tensioning roller.
Net wraps around rubber roller.	Net is not hanging far enough in the channel.	Loosen net brake. When tying, always drive with a PTO speed of 540 rpm.
	After an extended standstill time, the net sticks on the rubber roller	After an extended standstill time, insert net again.
Net is not cut off neatly.	Blade bar does not fall completely down.	Remove impurities.
	Dull blades	Change blades
Net does not reach the outside edges of the bale.	Net is not decelerated correctly during wrapping process.	Check setting of braking device.
	Net has got caught on the cutting blades.	Check setting of cutting blades.
	Starter rollers of film wrapping device are bent.	Check wrapping device and replace it, if necessary.
	Crop between spiral roller and scraper	Readjust scraper.
	Net spreader does not work.	Rotate the net spreader.
	The scrapers of cutting roller and conveyor roller are blocked.	Change once again the side in the swath before the net is shot in.
Tailgate cannot be opened correctly.	Hydraulic hose is not inserted.	Insert hydraulic hose into the appropriate coupling.
The bale does not roll or it just rolls slowly out of the bale chamber.	The sides are filled too strong or the baling pressure is too high.	Do not drive too far to the side.
Twine is not cut off.	Net spreader is folded down.	Fold up net spreader.
Net is drawn in during baling	The net hangs too far in the channel.	Increase the tension on the spring for net brake.
		When tying, always drive with a PTO speed of 540 rpm.



Malfunctions - Causes and Remedies

Malfunction	Possible cause	Remedy
The net does not reach the bale.	If the crop is crumbly, the deflector plate (3) is pressed upward.	Mount screw (1) M8 x 40 with nuts (2) right and left of the deflector plate (3).  VP700024



Malfunctions - Causes and Remedies

18.3 Malfunctions on the central chain lubrication system

Malfunction	Possible cause	Remedy
Low oil consumption	Low pressure	Pump works with difficulty, dirt in the pump area • Clean Pump is not pressed to a full stroke • Adjust according to the operating instructions Pump valve does not close correctly • Remove and clean or replace
	Oil is too thick	• Replace with recommended oil
	System contaminated	• Clean or replace all measuring valves
Oil consumption too high	Main pipe torn	• Repair or replace
	Oil too thin	• Drive with thicker oil • Reduce the pump stroke
Machine is dry	No pressure	Pump not running • Repair, adjust or replace Main pipe torn • Repair or replace System has no oil • Vent the system (see chapter Central chain lubrication system)
	System blocked	Dirt • Clean the system and clean or replace all measuring valves. Pipe jammed • Repair or replace
Pump is not pressed to a full stroke.	Oil is too thick, nozzles clogged.	• Replace with recommended oil • Clean nozzles



18.4 Error Messages of KRONE Operation Terminal

The error messages in the display are described depending on how the machine is fitted in the Chapters "KRONE ISOBUS-Terminal" or "KRONE Operation Terminal Beta".

Disposal of the machine

19 Disposal of the machine

19.1 Disposal of the machine

After the service life of the machine has expired, the individual components of the machine must be disposed of properly. The applicable country-specific, current waste disposal guidelines and the legal laws must be observed.

Metal parts

All metal parts must be brought to a metal recycling centre.

The components must be freed from operating fluids and lubricants (gear oil, oil from hydraulic system, ...) before being scrapped.

The operating fluids and lubricants must be brought separately to an environmentally friendly disposal point or recycling centre.

Operating fluids and lubricants

Operating fluids and lubricants (diesel fuel, coolant, gear oil, oil from hydraulic system, ...) must be brought to a disposal point for waste oil.

Synthetic materials

All synthetic materials must be brought to a recycling centre for synthetic materials.

Rubber

Rubber parts (hoses, tyres, ...) must be brought to a rubber recycling centre.

Electronic scrap

Electronic parts must be brought to a disposal point for electronic scrap.

20

Appendix

20.1

Diagram

Fortima F 1250 (MC) / Fortima F 1600 (MC)

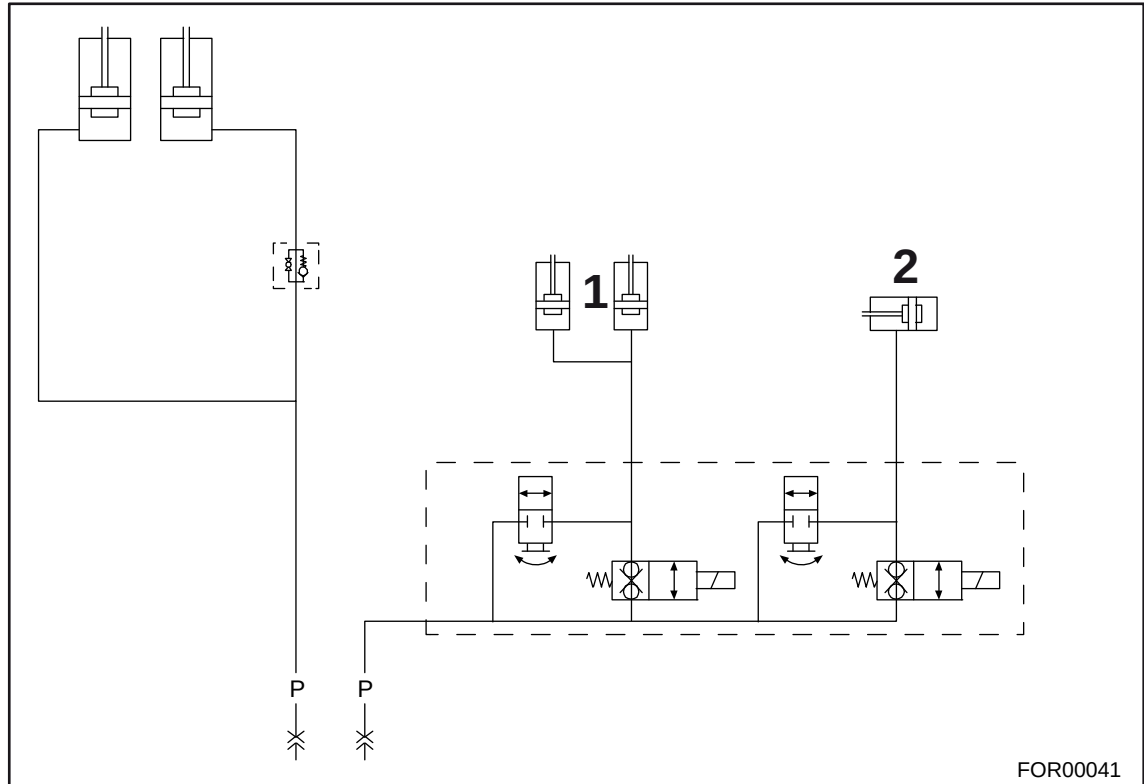


Fig. 315

1	Pick-up
2	Blade 0

Appendix

Fortima V 1500 (MC) / Fortima V 1800 (MC)

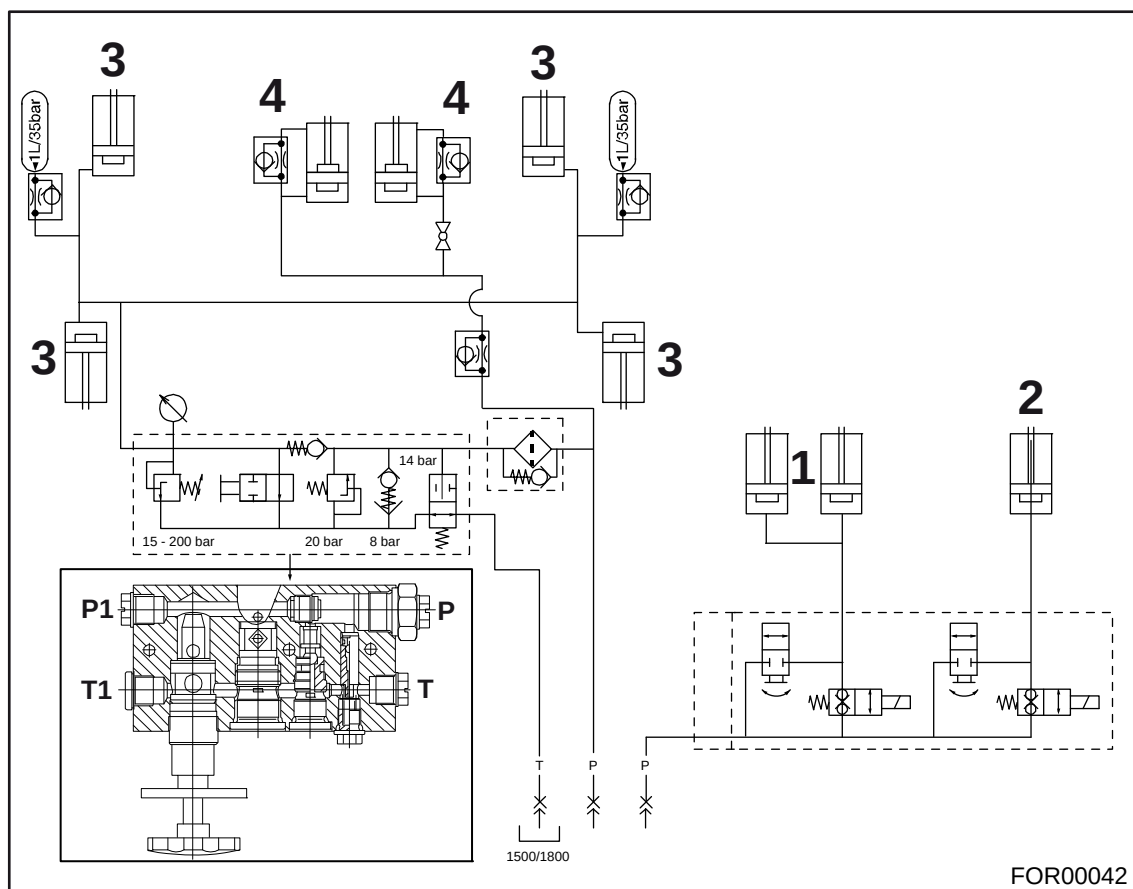


Fig. 316

1	Pick-up
2	Blade 0
3	Clamping cylinder
4	Tailgate



20.2

Circuit Diagram



KRONE

Stromlaufplan

Dokument-Nr.:	D24	Version:
150101374	DE	00

Fortima Medium

F1250, F1600 MC



[illegible]

https://truckmanualshub.com/

1		2		3		4		5		6		7		8	
BMK		Funktion				Blatt/Pfad									
-A1		Platine Zentralelektrik				/2.A1									
-B3		Garnbindung stopp				/4.C8									
-B4		Netzbindung stopp				/4.C6									
-B5		Befüllungsanzeige rechts				/1.D6									
-B6		Befüllungsanzeige links				/1.D8									
-B8		Position Bindung				/4.D3									
-F1		Sicherung				/1.C2									
-H1		Signalleuchte Kammerdruck links				/3.E1									
-H2		Signalleuchte Kammerdruck rechts				/3.E3									
-H3		Signalgeber				/3.D4									
-H4		Steuerung Ein				/1.A3									
-K1		Pick-up				/1.E4									
-K2		Messerboden				/1.E5									
-M1		Motor Bindung Start				/4.C5									
-S1		Steuerung Ein - Aus				/1.B2									
-S2		Taster Bindung Start				/4.C2									
-S7		Umschalter Garn/Netz				/4.D7									
-S9		Umschalter Pick-up/Messer				/1.A5									

C

B

A

Änderung

1

2

3

Ersteller

Datum

Geprüft

altens

09.06.2015

Datum

Name



Copyright reserved

Dokument-Nr.: D24

150101374 DE - 00

F1250, F1600 MC

Betriebsmittelliste

Betriebsmittelliste

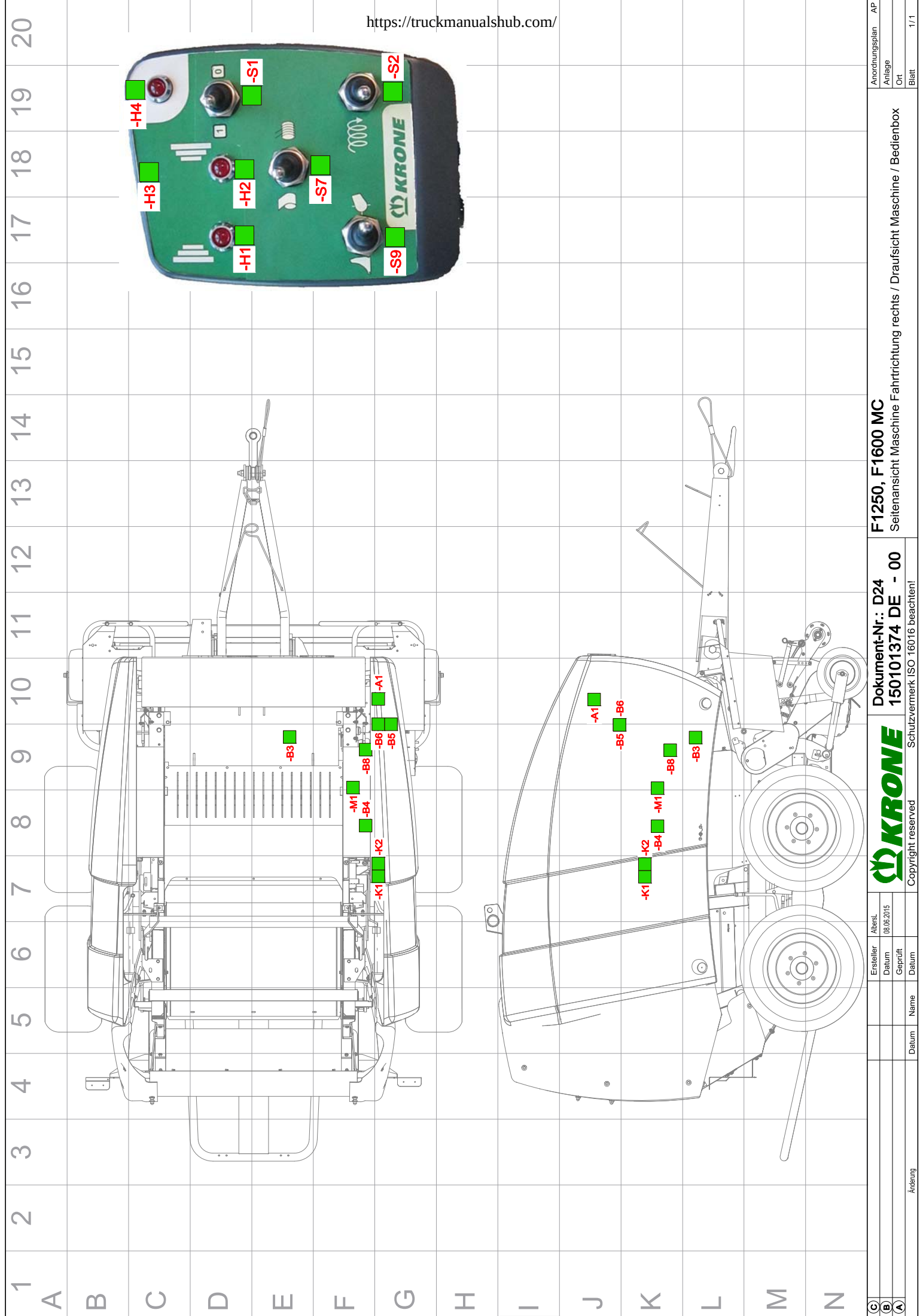
Anlage

Ort

Blatt

1/1

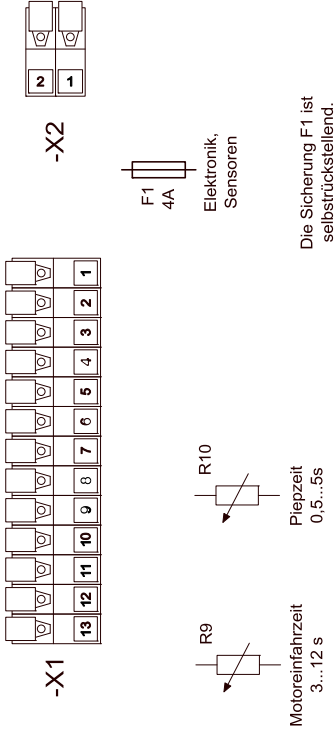
8



-A1

Platine Zentralelektrik

AP11J10
AP11G10



Motoreinfahrzeit
3...12 s

Piepzeit
0,5...5s

Die Sicherung F1 ist
selbstrückstellend.

Stecker	Anschluss	Beschreibung	Querverweis	
Versorgung Platine				
-XS1	2	Spannung Platine (Einspeisung) (P5)	+12V	/1.E2
-X1	1	GND Versorgung (Einspeisung)	GND	/1.E3
Versorgung Sensoren 8,2V				
-X1	6	Eingang S6	+8,2V_S6	/1.A8
-X1	7	Eingang S5	+8,2V_S5	/1.A7
-X1	8	Eingang S3	+8,2V_S3	/4.A6
-X1	9	Eingang S4	+8,2V_S4	/4.A8
-X1	10	Eingang S8	+8,2V_S8	/4.A3
Versorgung Aktoren				
-X1	2	Spannung Signalgeräte	+12V_H1/H2/H3	/3.A5
-XS2	1	Versorgung Schalter (P4)	+US2	/4.A2

Stecker	Anschluss	Adresse	Betriebsmittel	Funktion	Querverweis
Eingänge					
-X1	11	IN_S5	B6	Befüllungsanzeige links	/1.F8
-X1	12	IN_S8	B8	Position Bindung	/4.F3
-X1	13	IN_S6	B5	Befüllungsanzeige rechts	/1.F7
-XS7	2	IN_P2	S7	Umschalter Garn/Netz	/4.F8
-XS2	2	IN_P3		Taster Bindung Start	/4.F2
Ausgänge					
-X1	3	OUT_H3	H3	Signalgeber	/3.A4
-X1	4	OUT_H2	H2	Signalleuchte Kammerdruck rechts	/3.A3
-X1	5	OUT_H1	H1	Signalleuchte Kammerdruck links	/3.A2
-X2	1	OUT_M1.1		Motor Bindung Start	/4.A5
-X2	2	OUT_M1.2		Motor Bindung Start	/4.A4

C

B

A

D

E

F

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

3

2

1

8

7

6

5

4

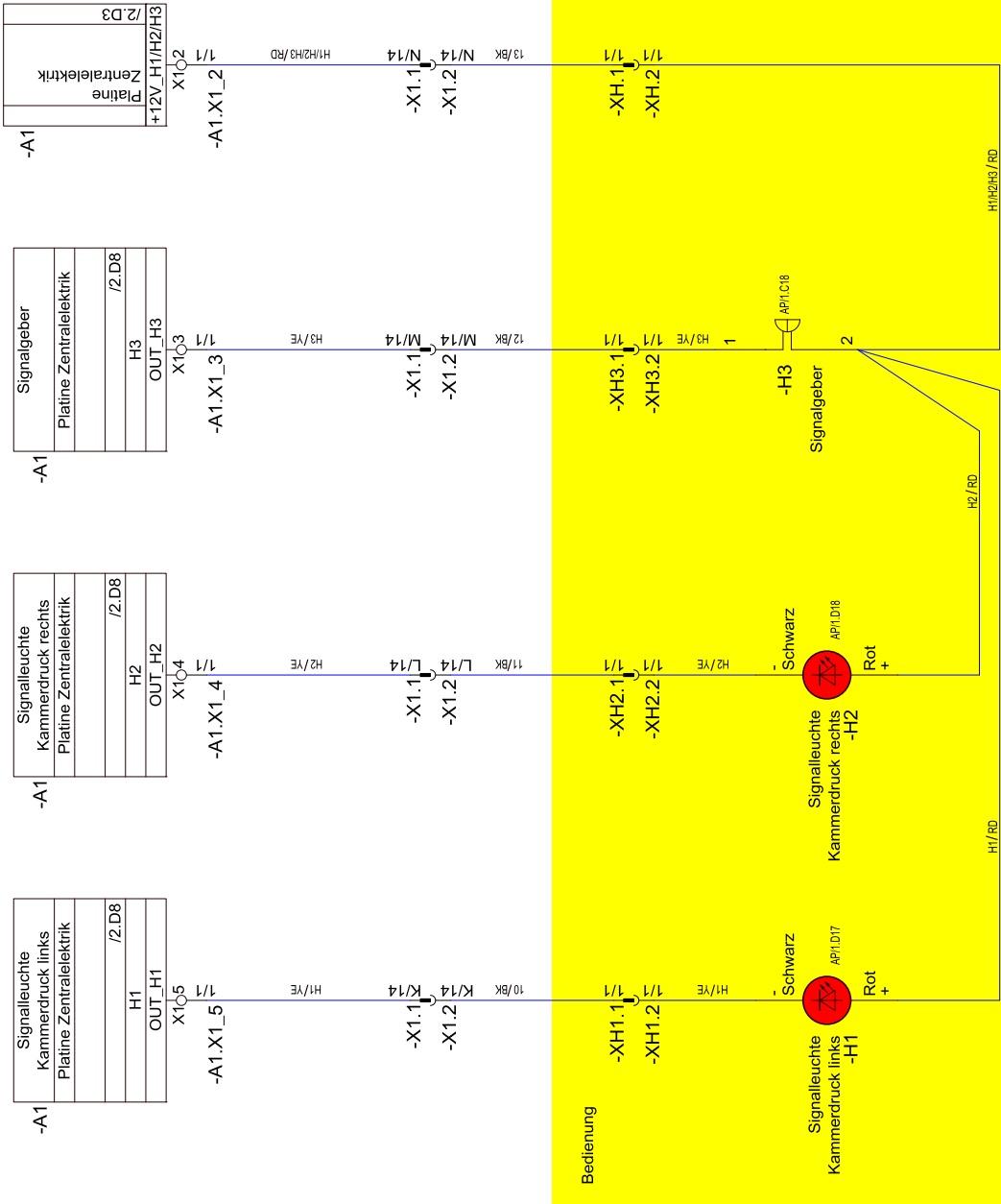
3

2

1

8

7

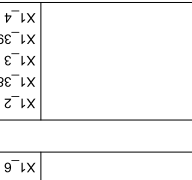
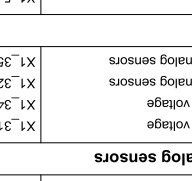
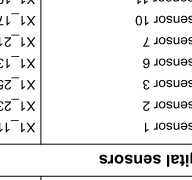
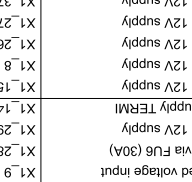
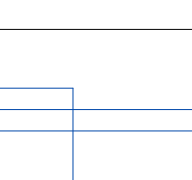
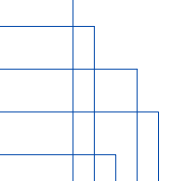
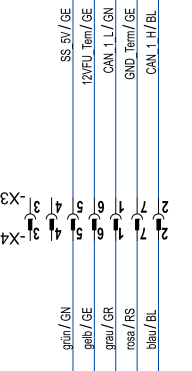




-A2
Terminal Beta

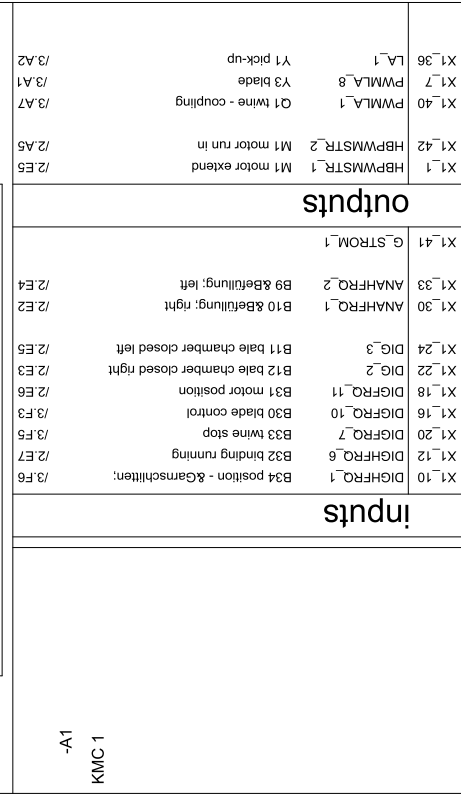
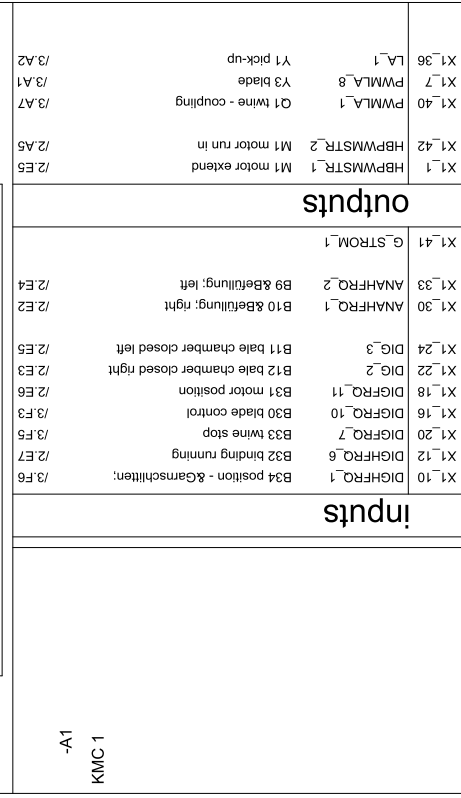
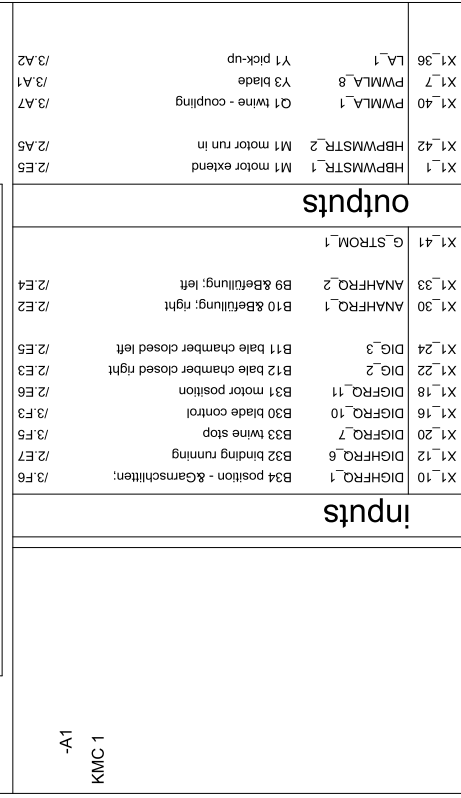
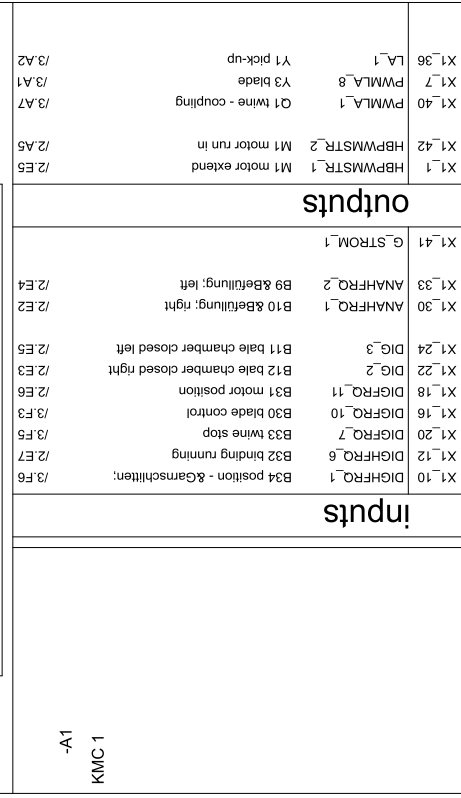
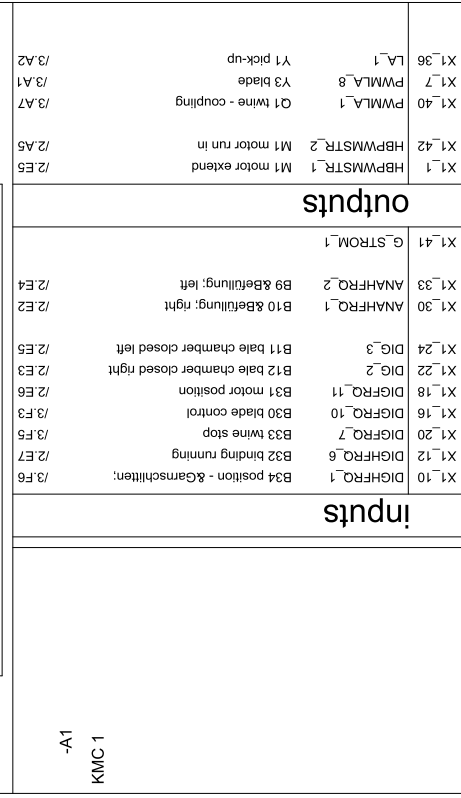
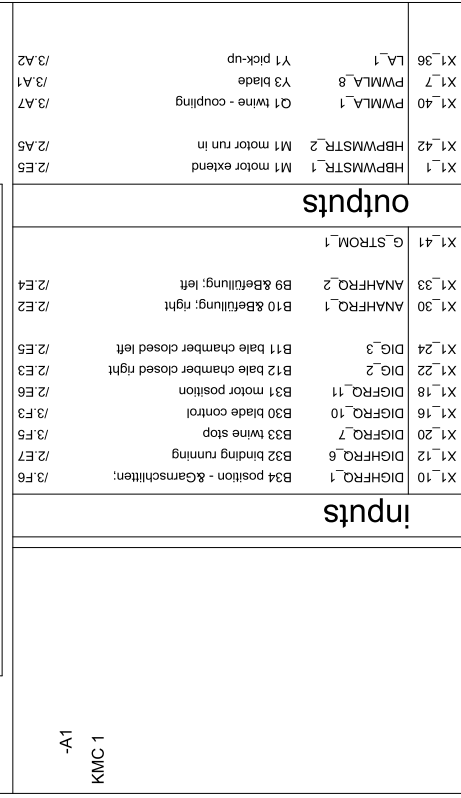
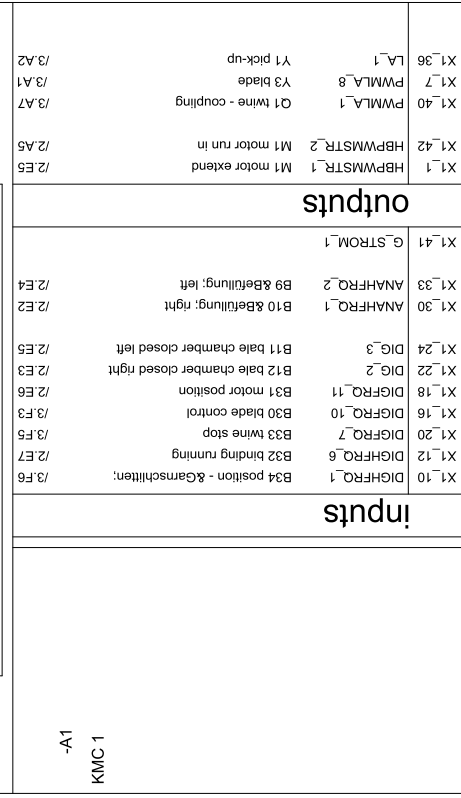
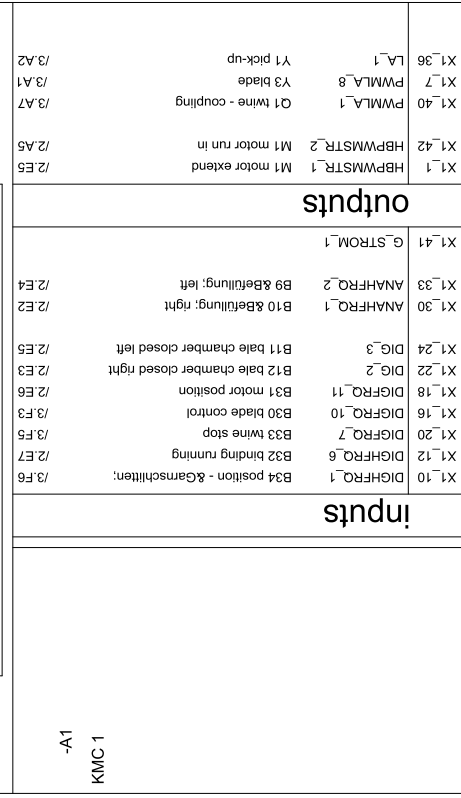
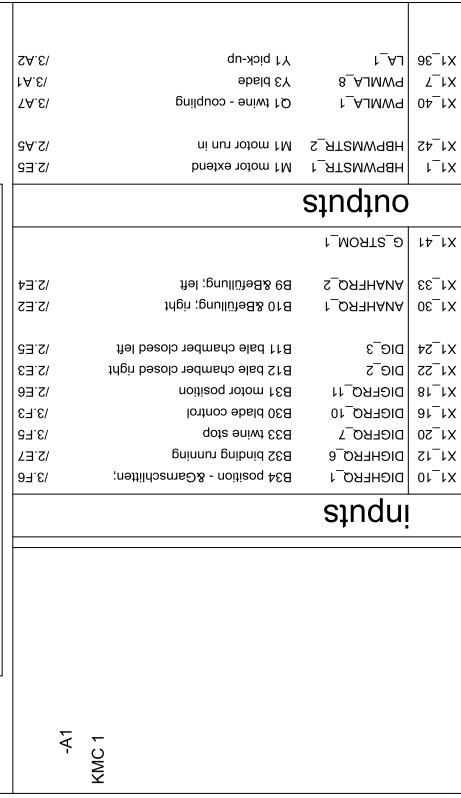
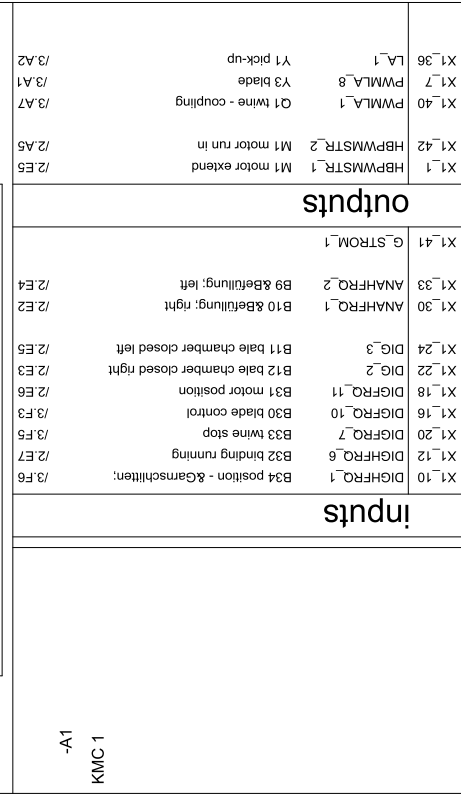
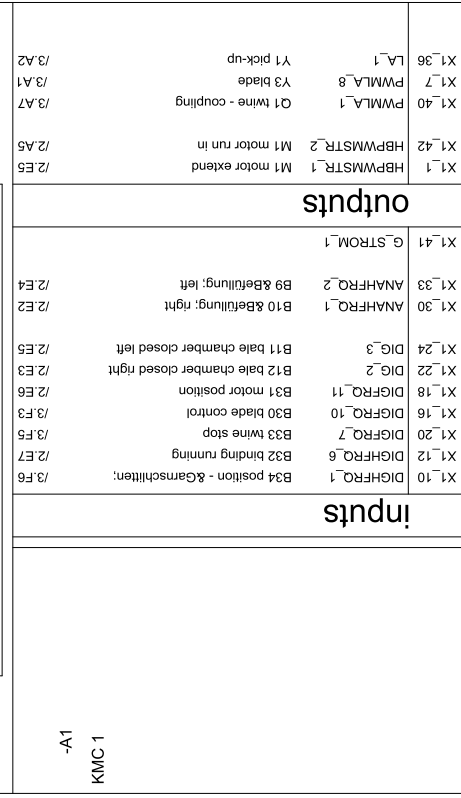
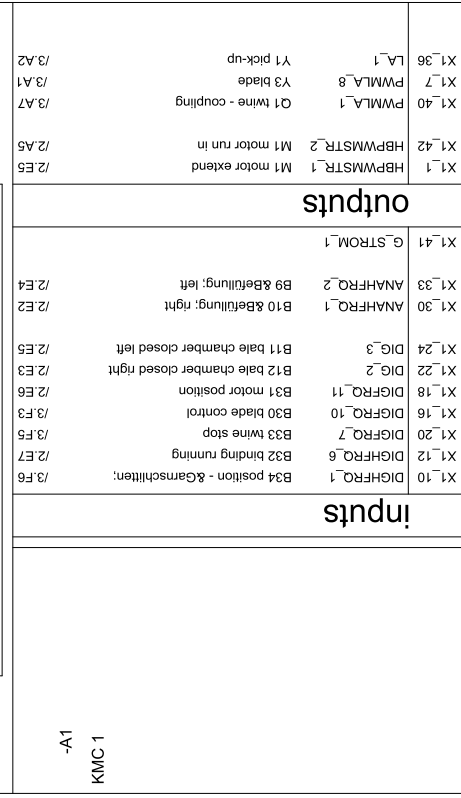
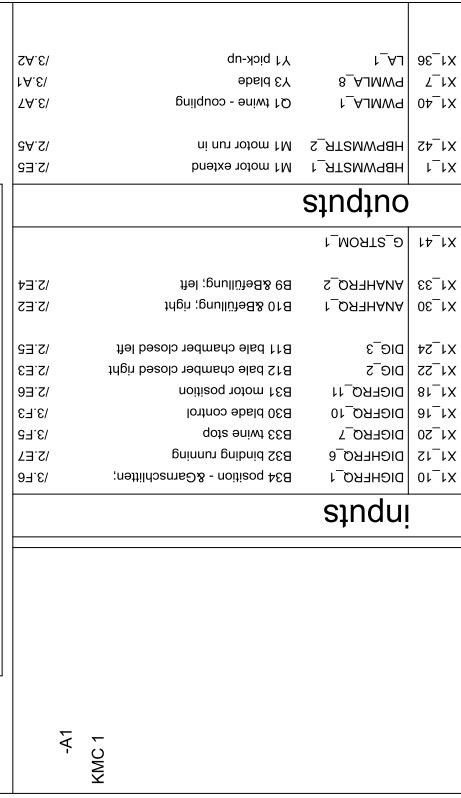
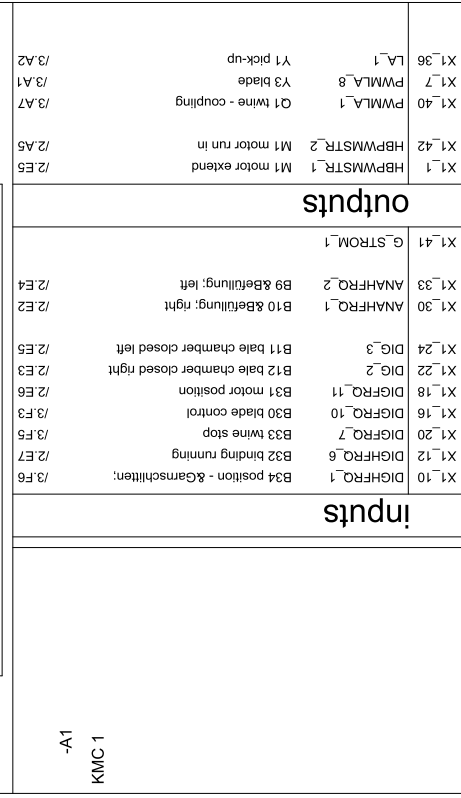
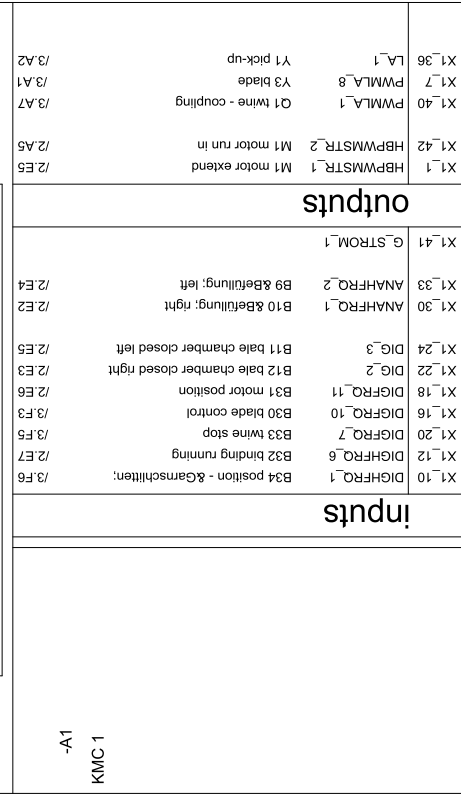
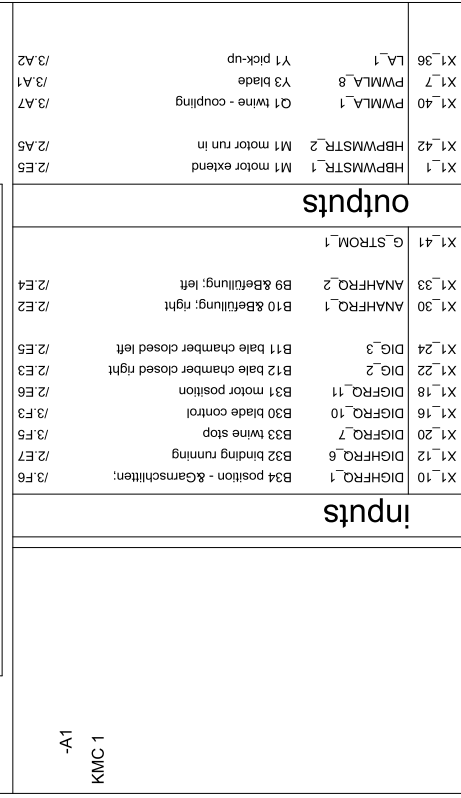
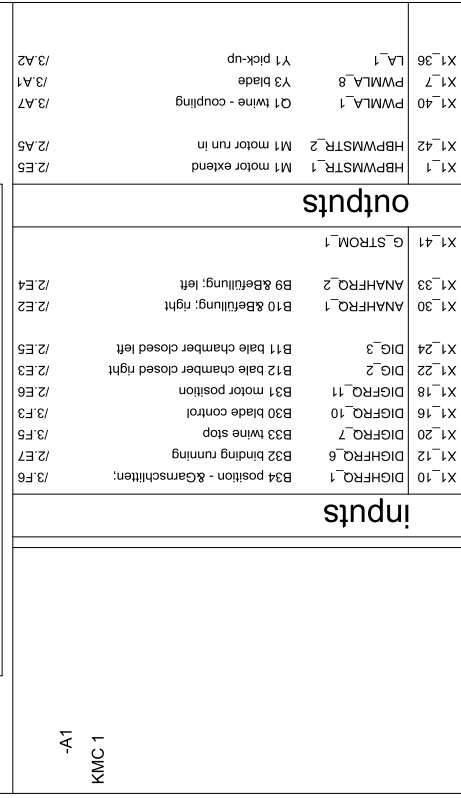
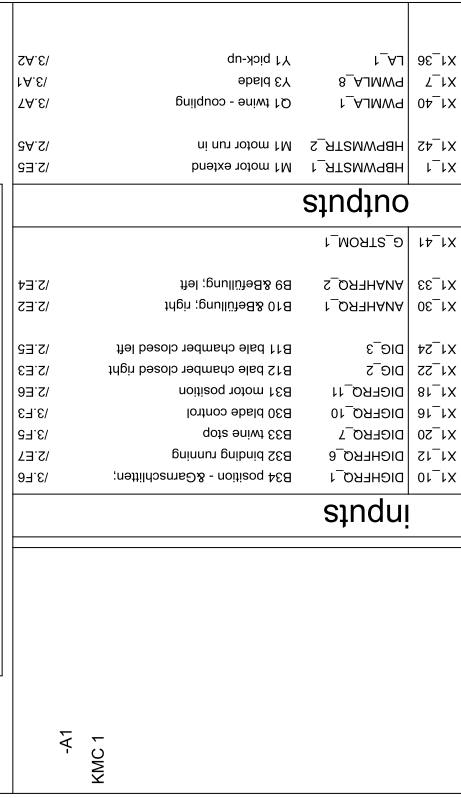
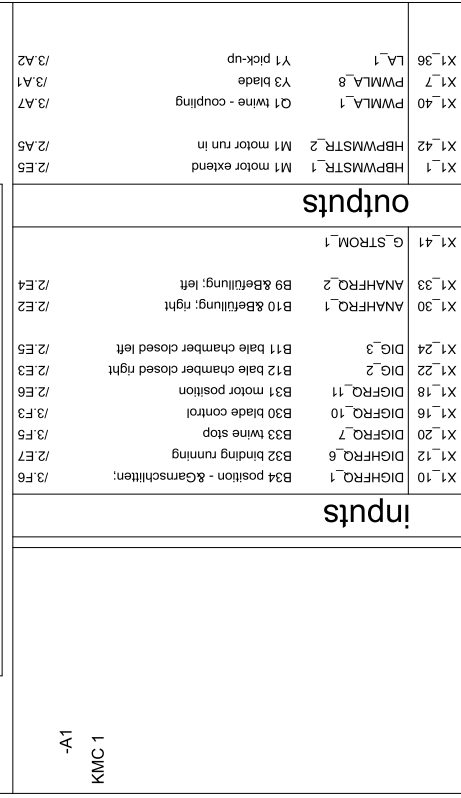
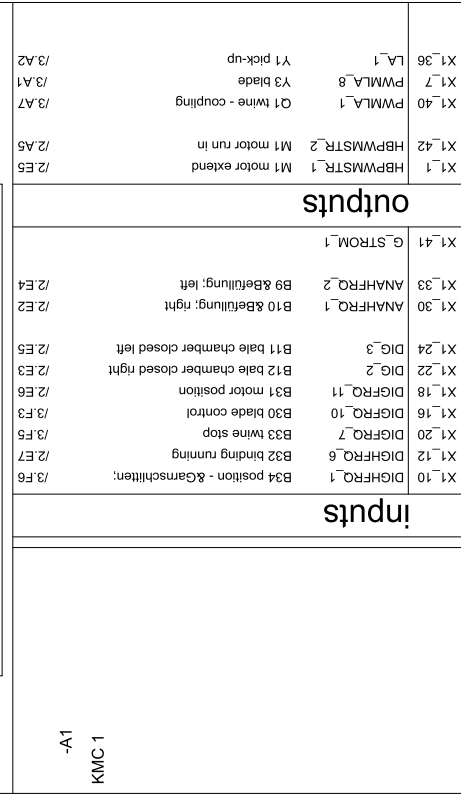
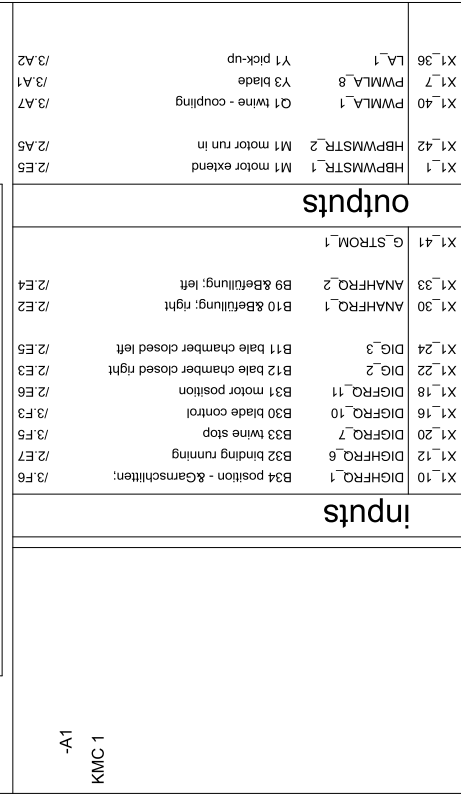
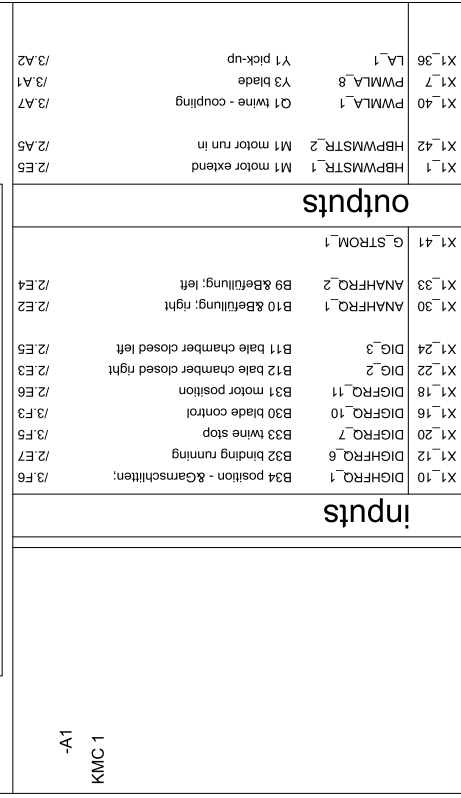
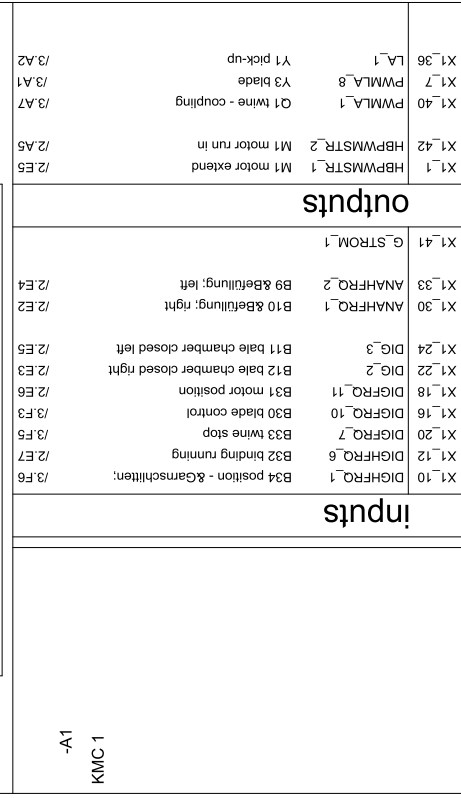
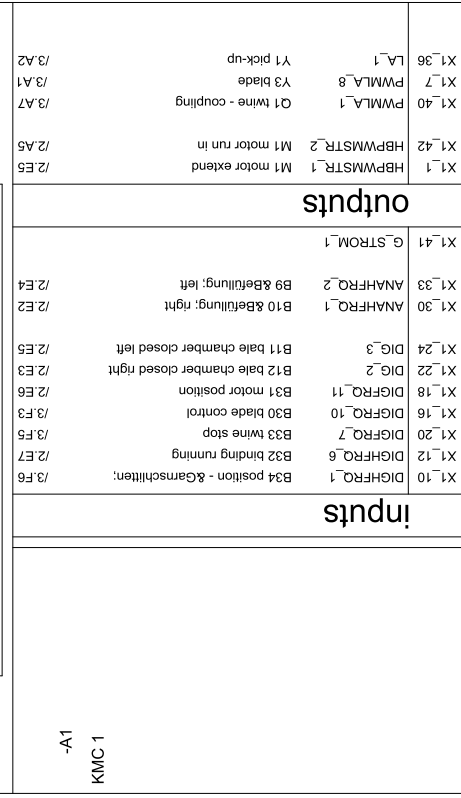
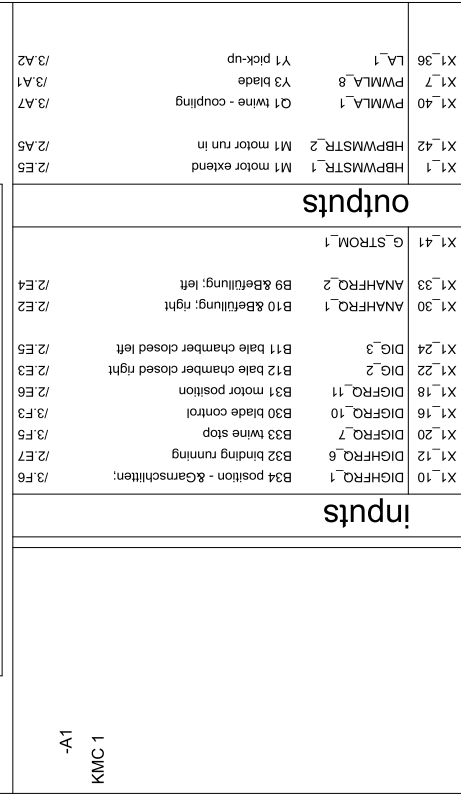
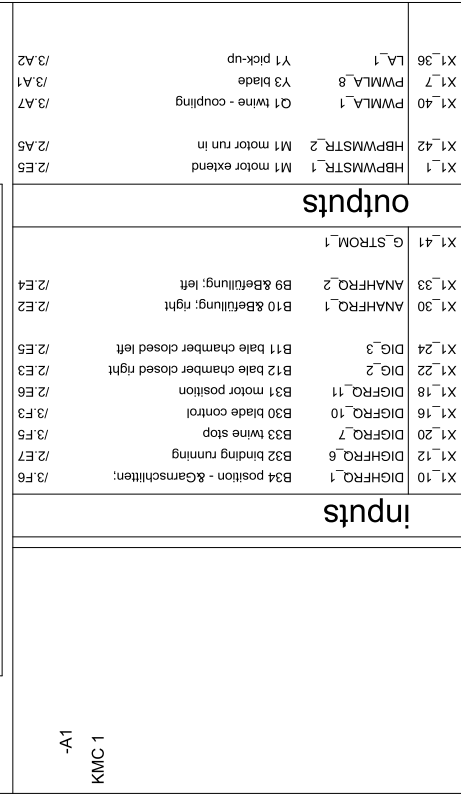
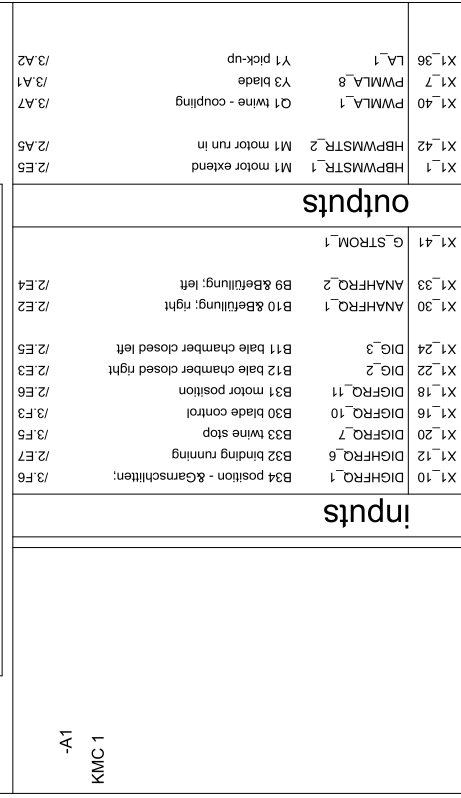
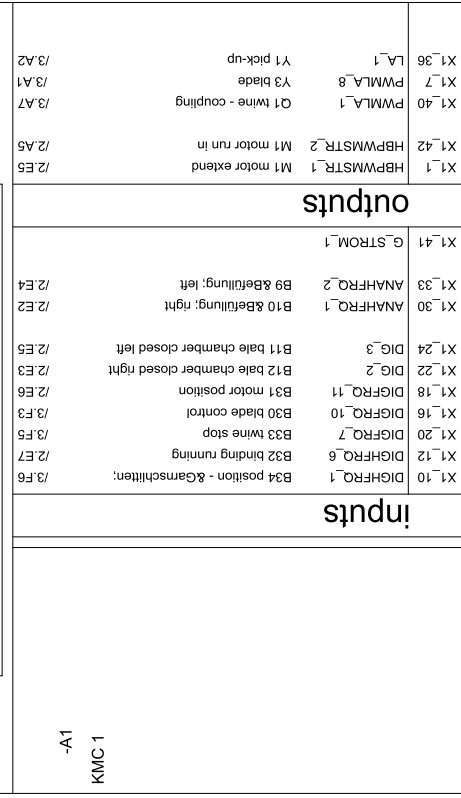
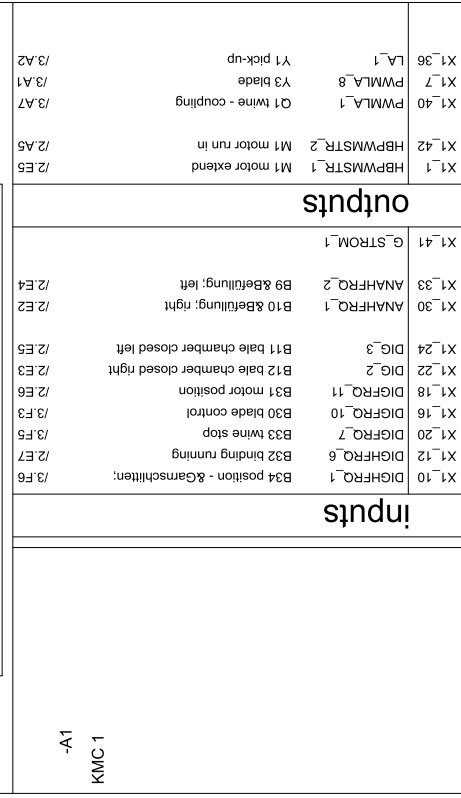
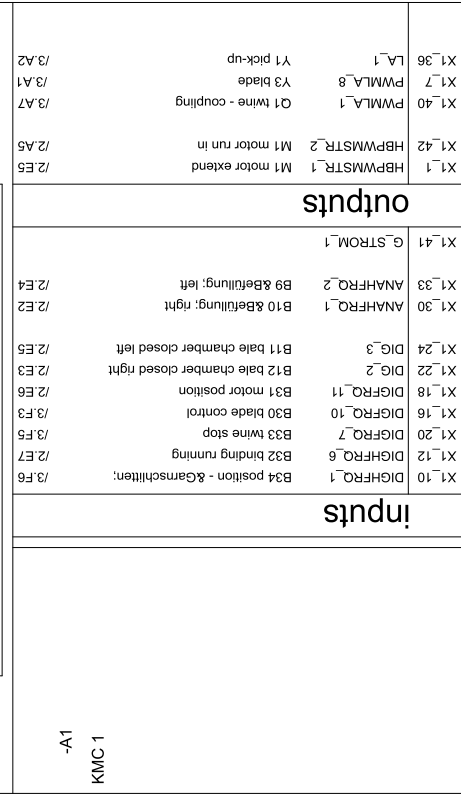
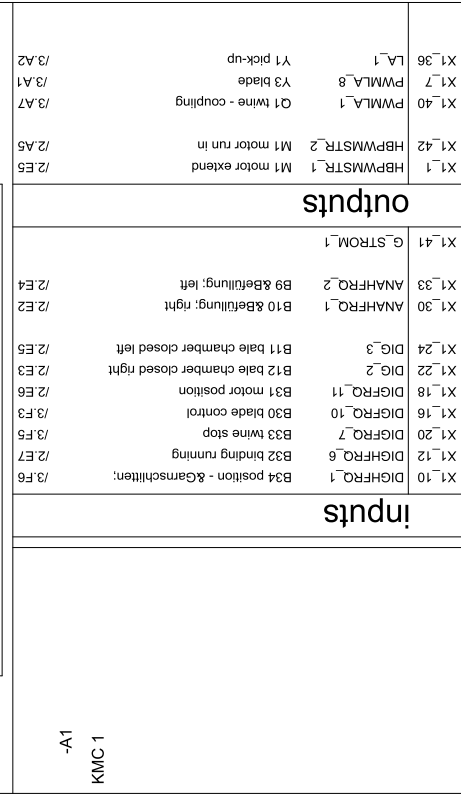
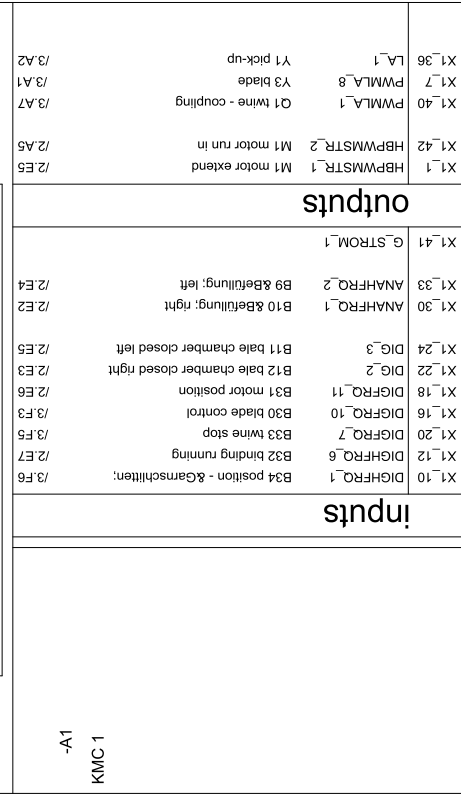
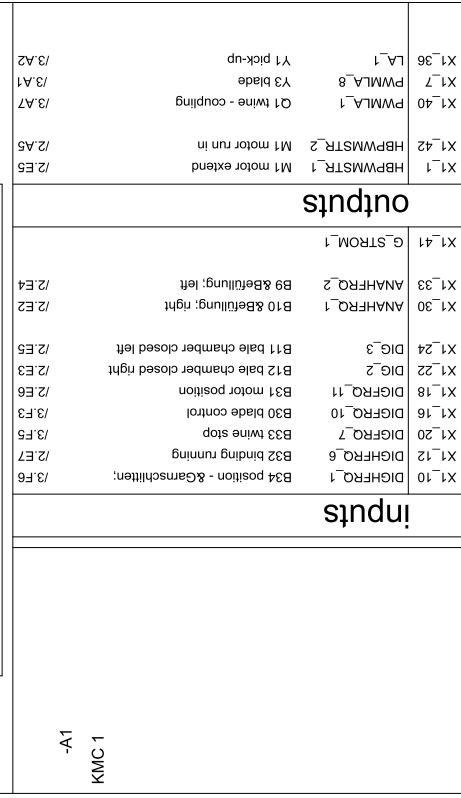
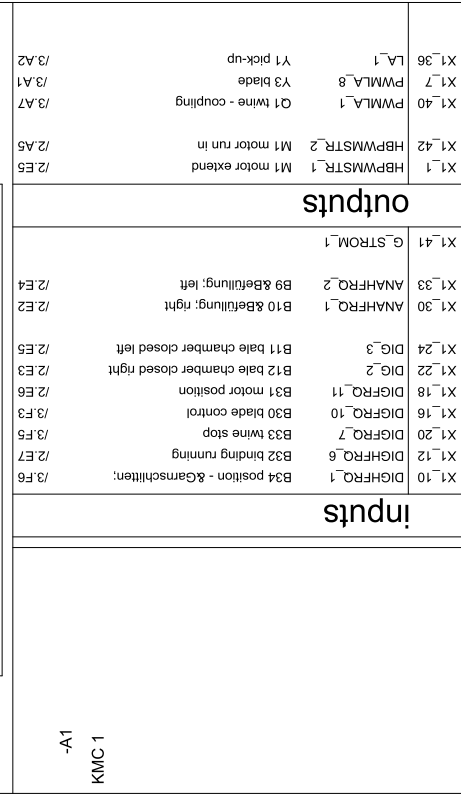
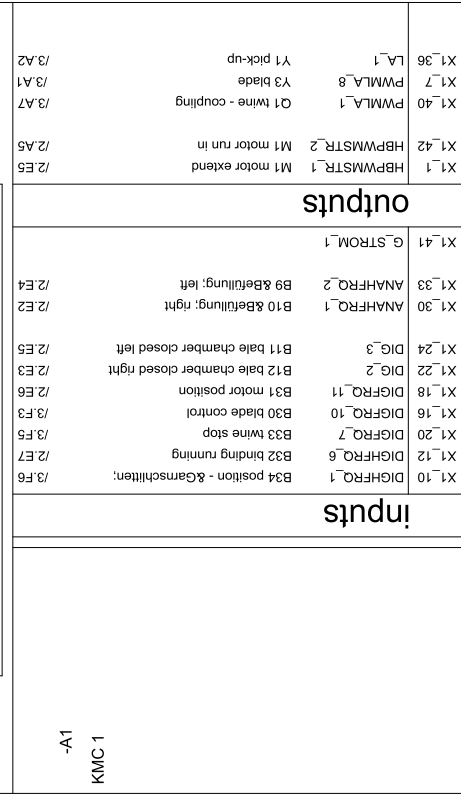
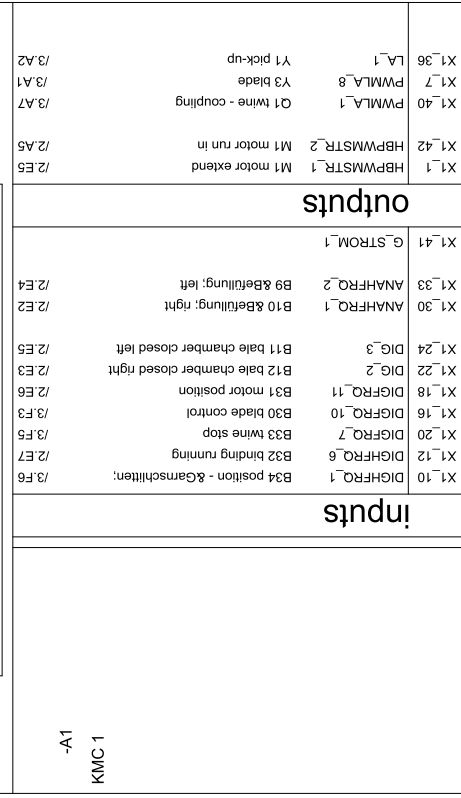
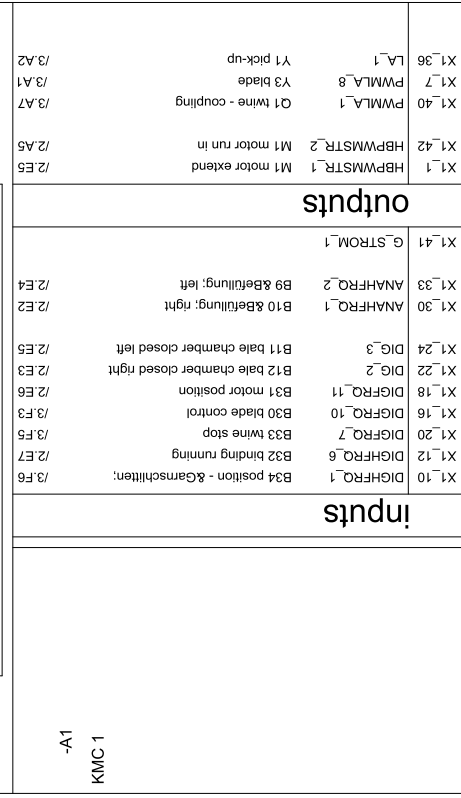
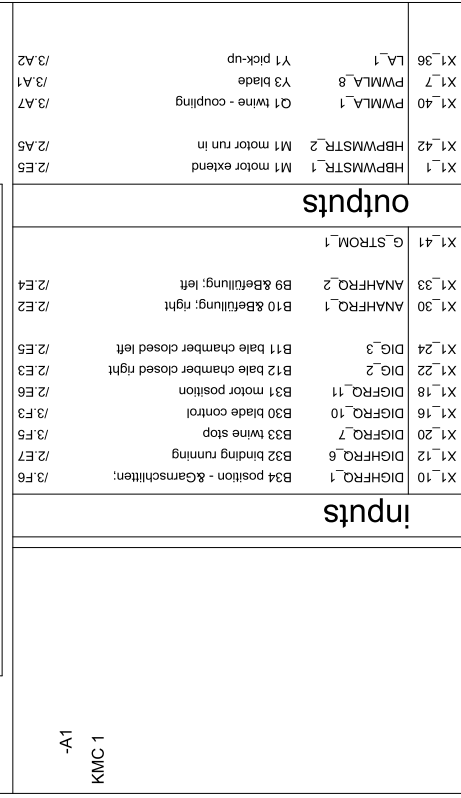
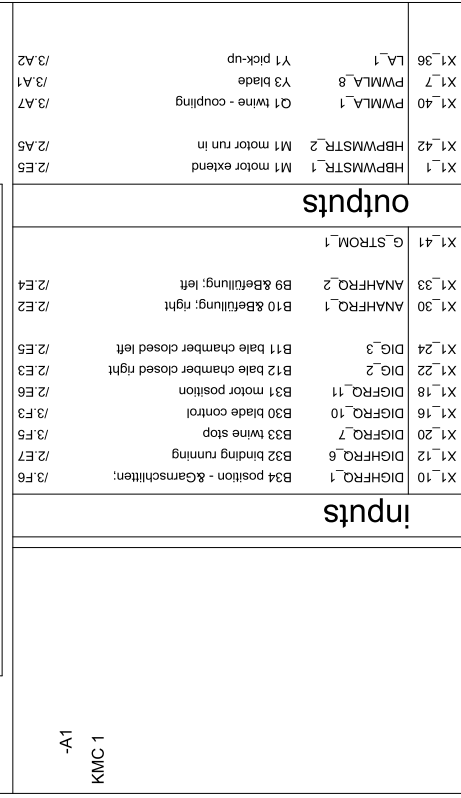
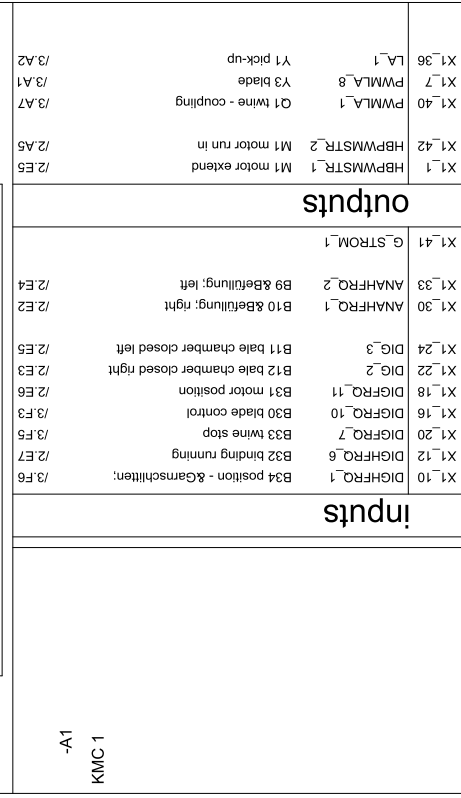
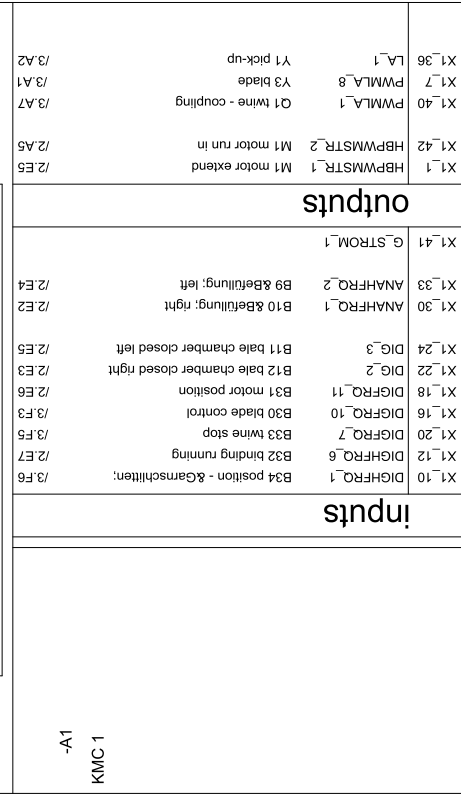
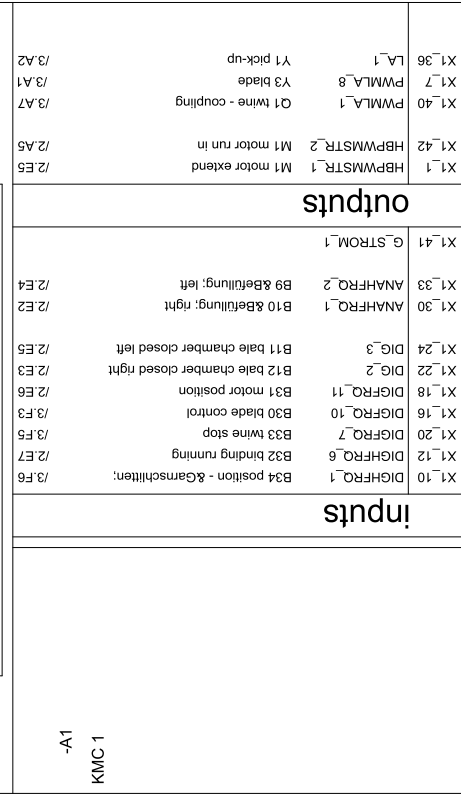
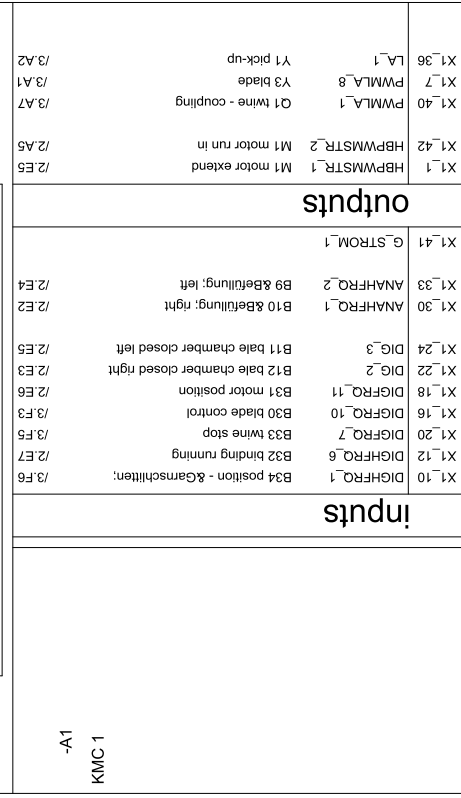
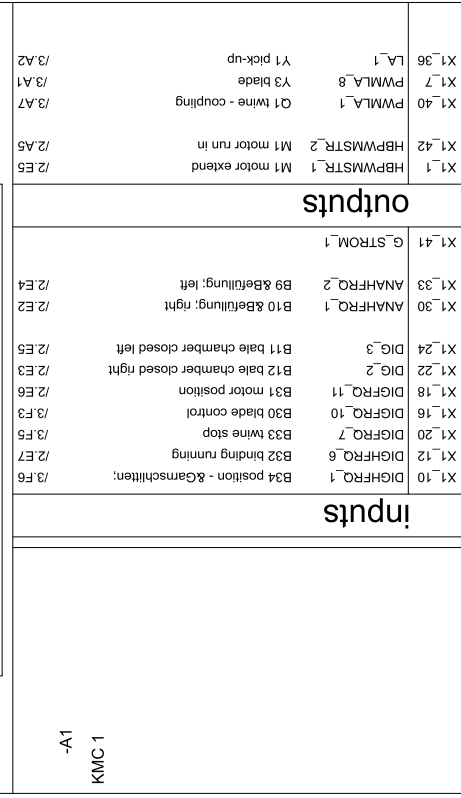
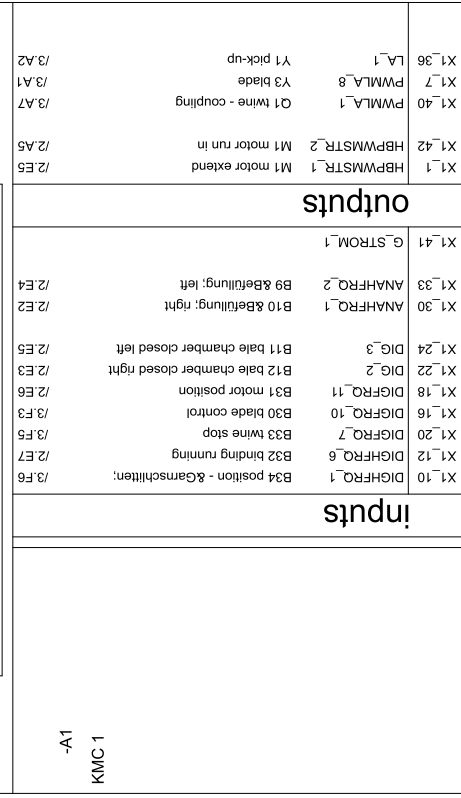
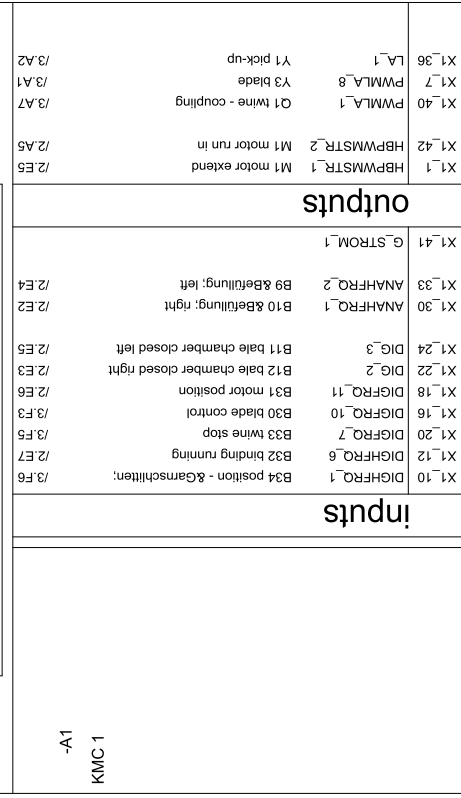
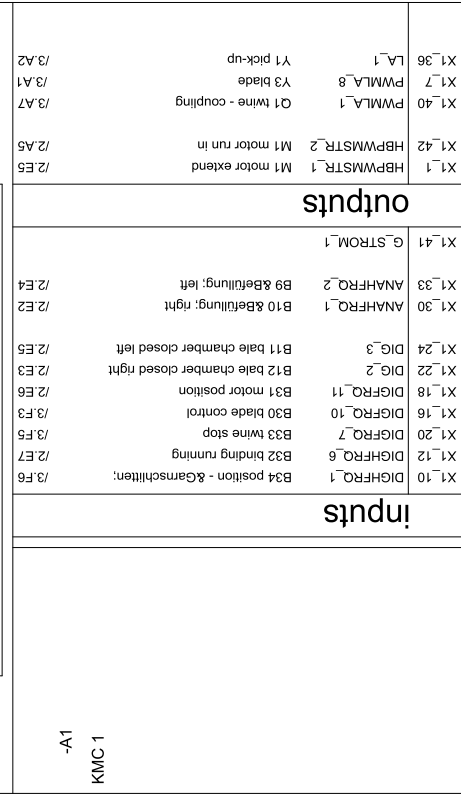
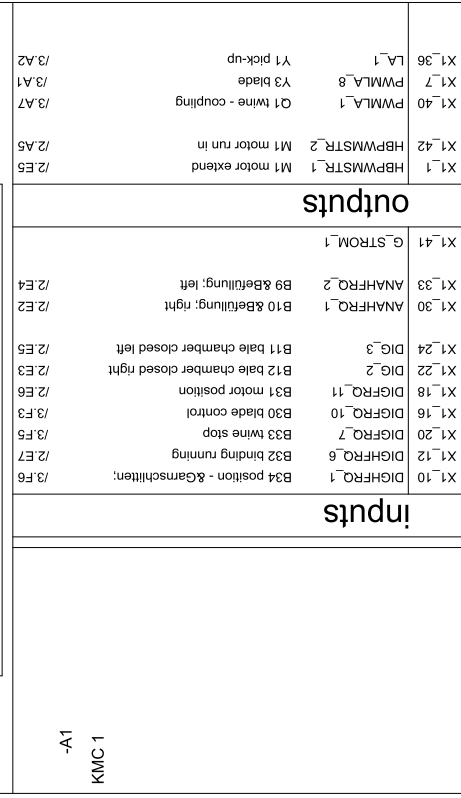
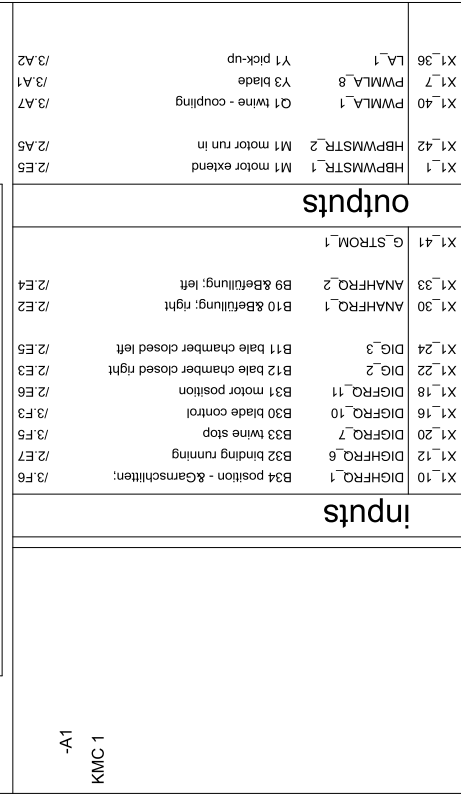
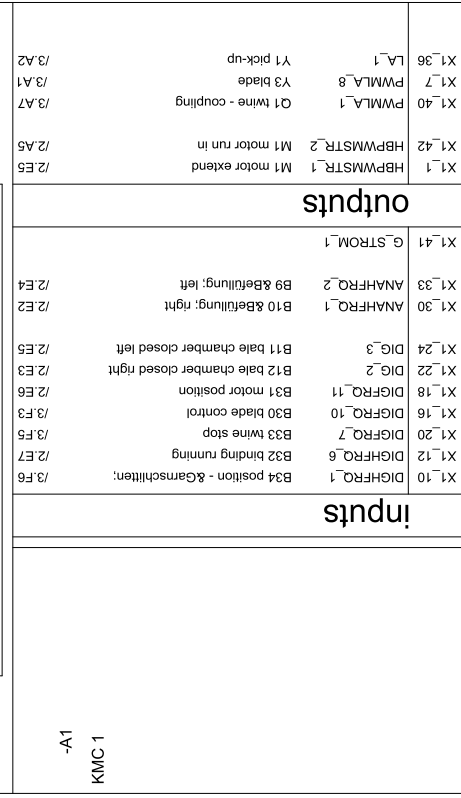
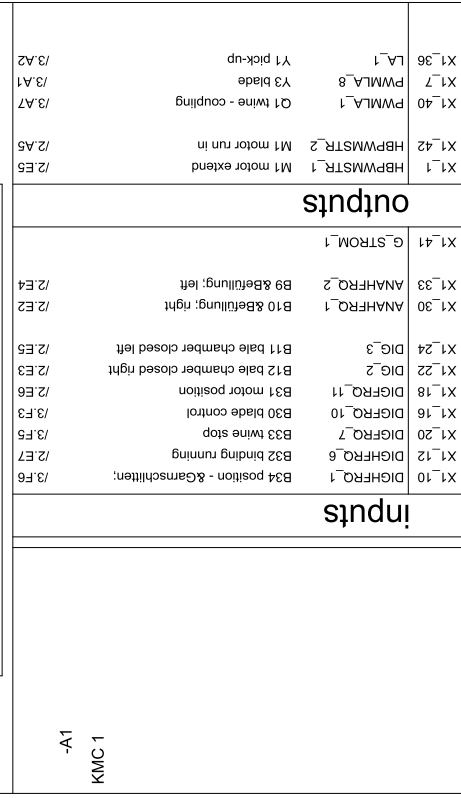
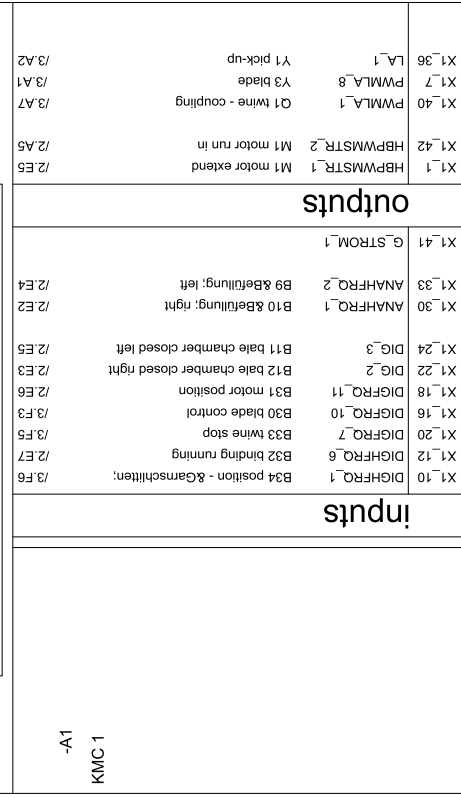
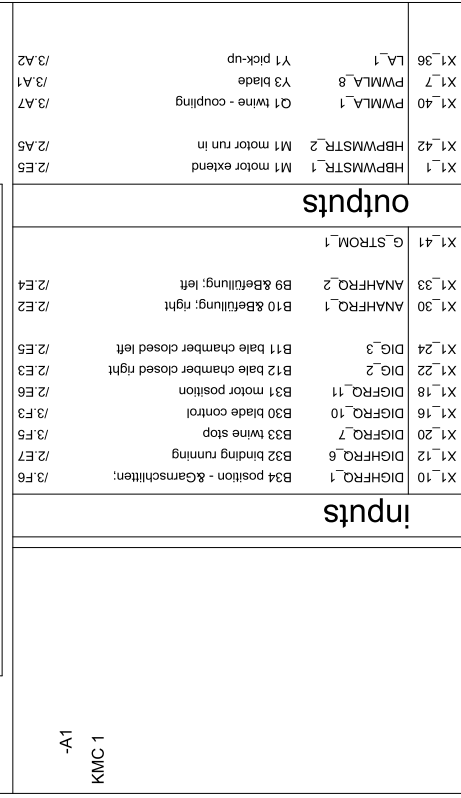
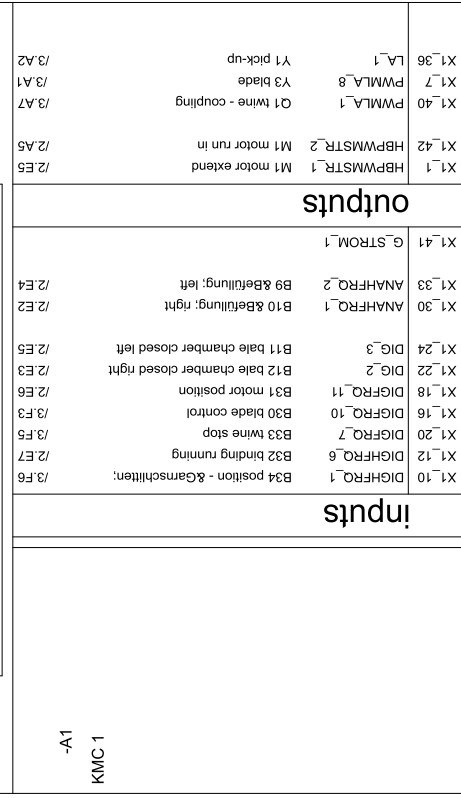
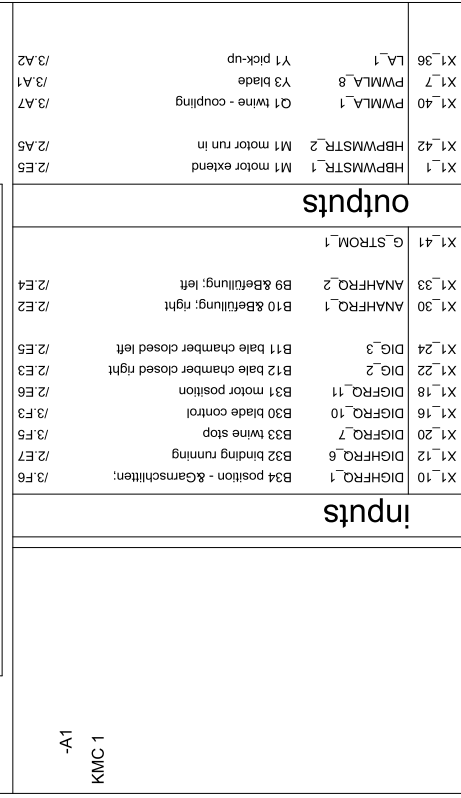
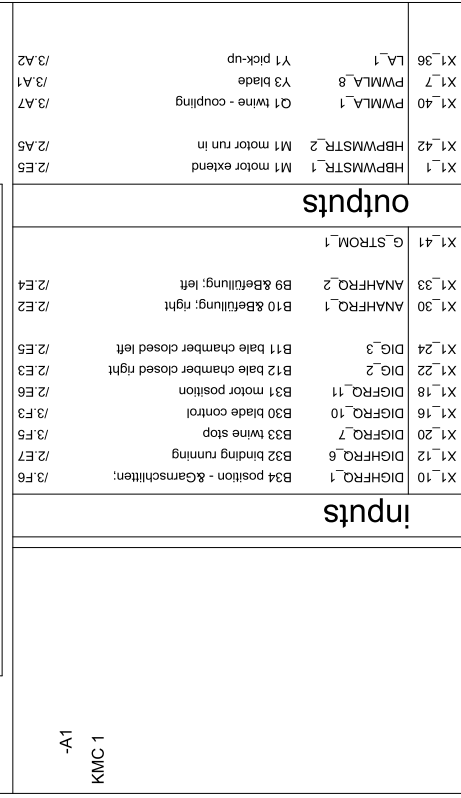
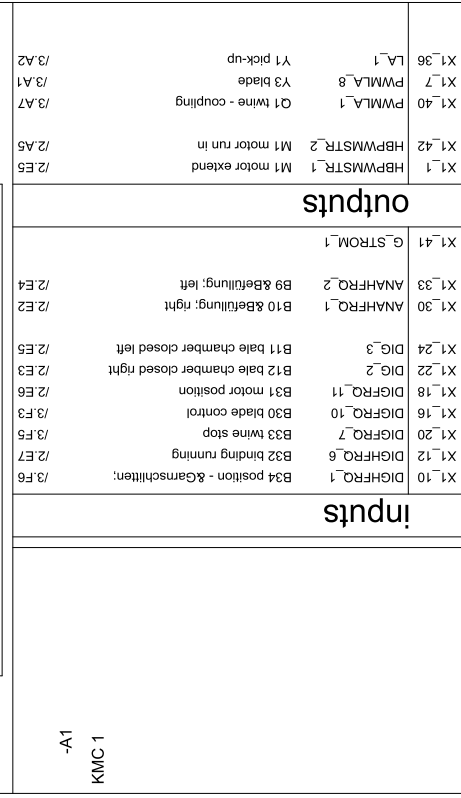
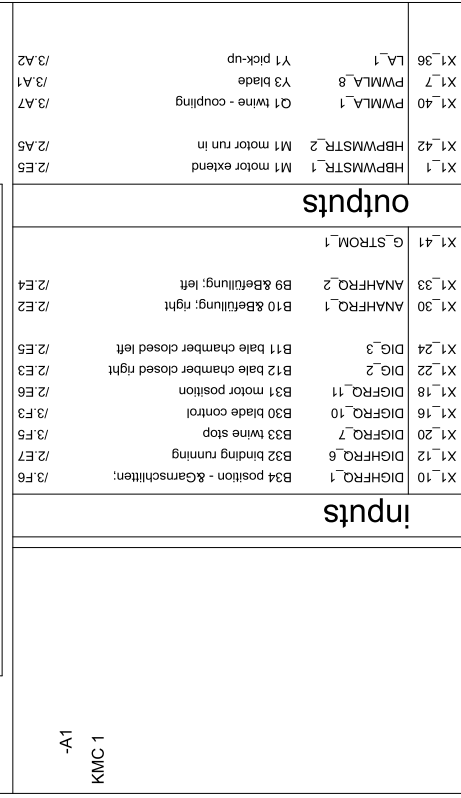
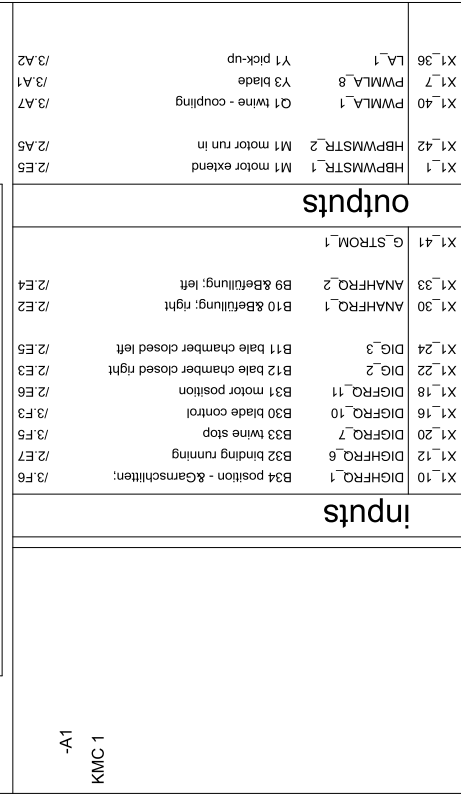
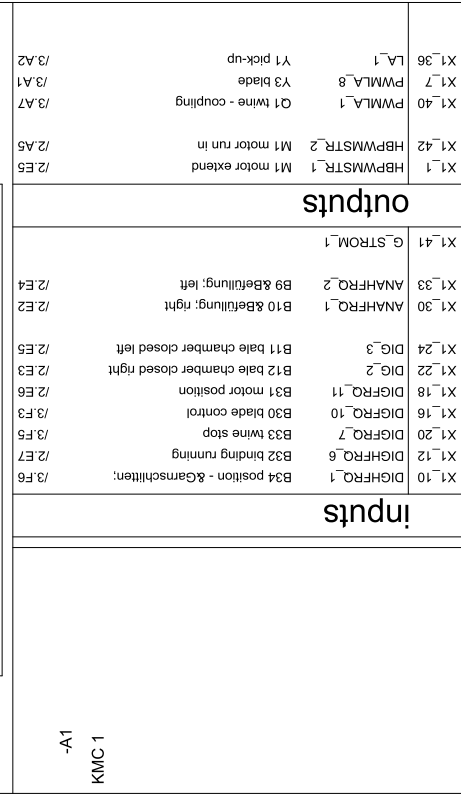
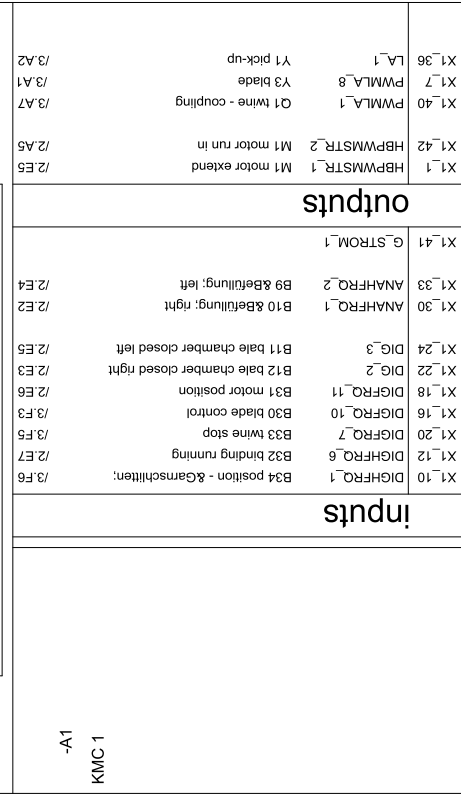
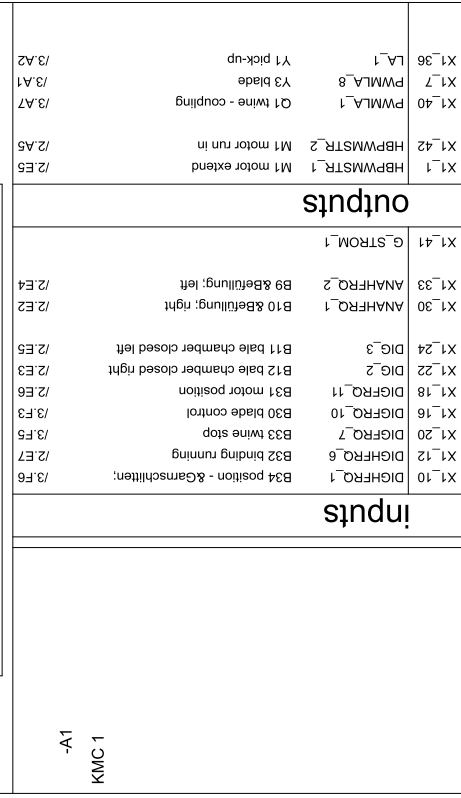
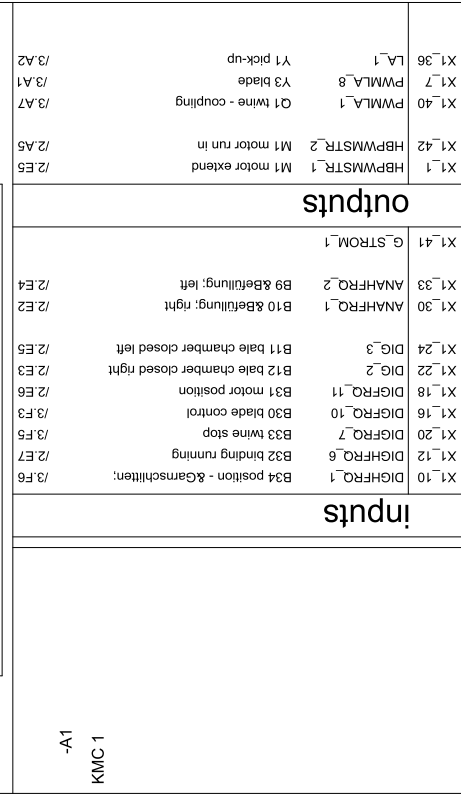
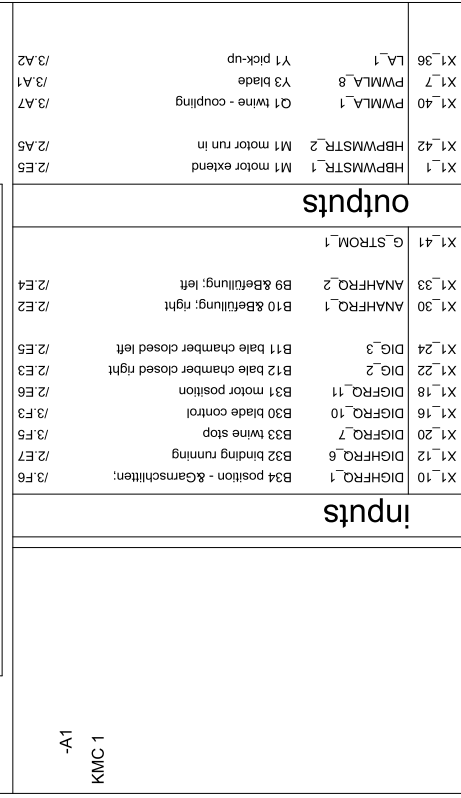
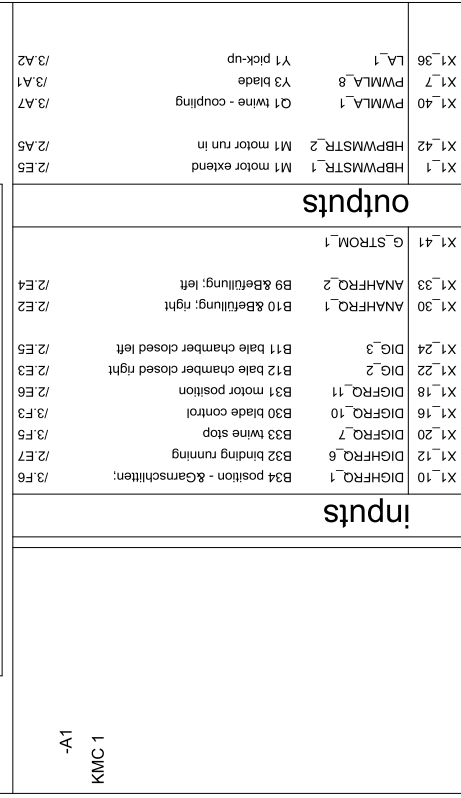
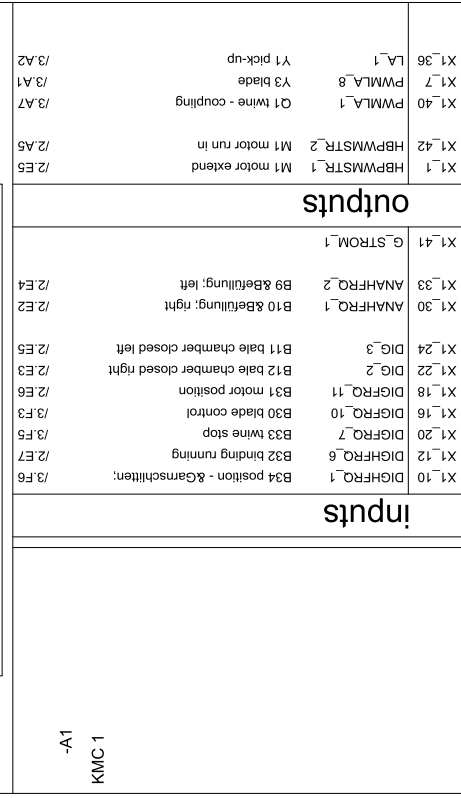
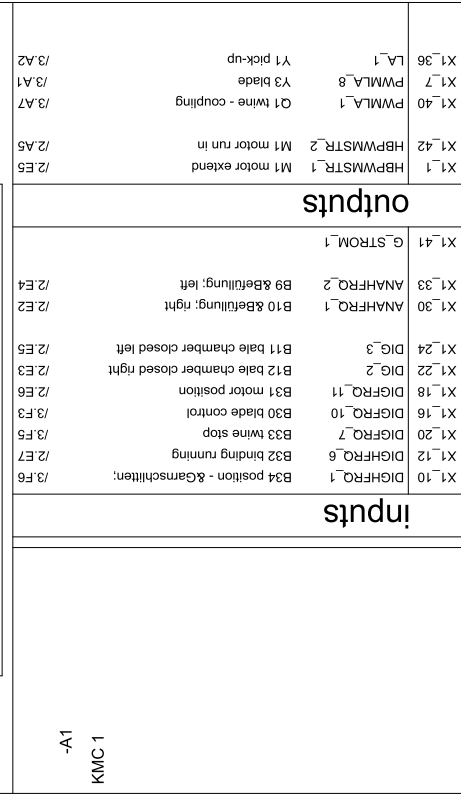
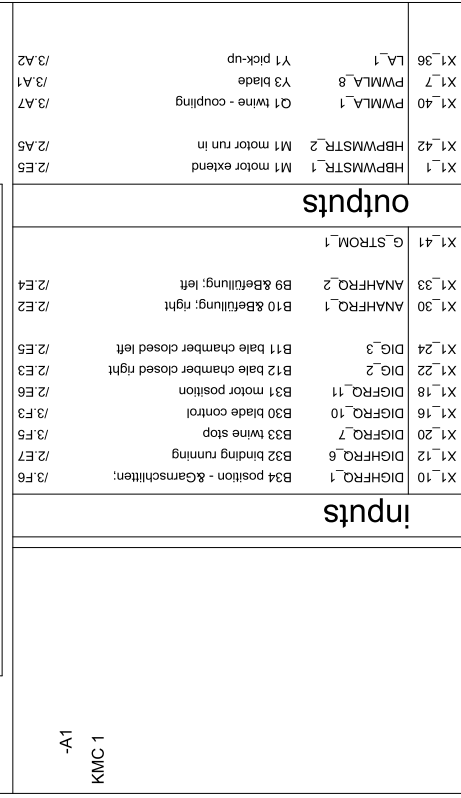
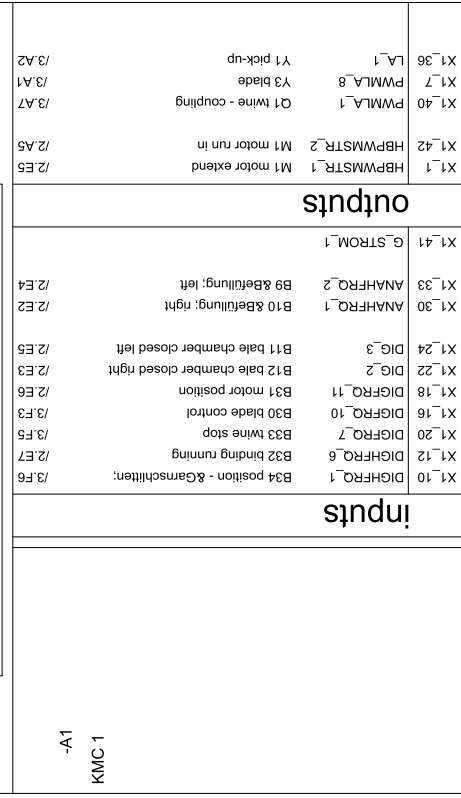
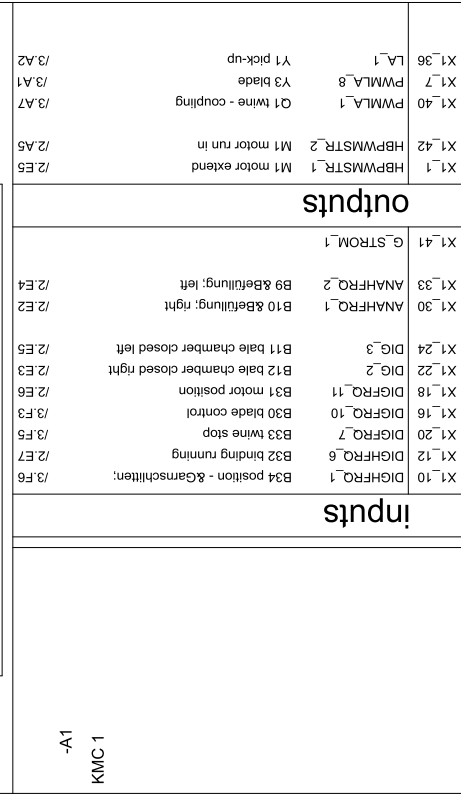
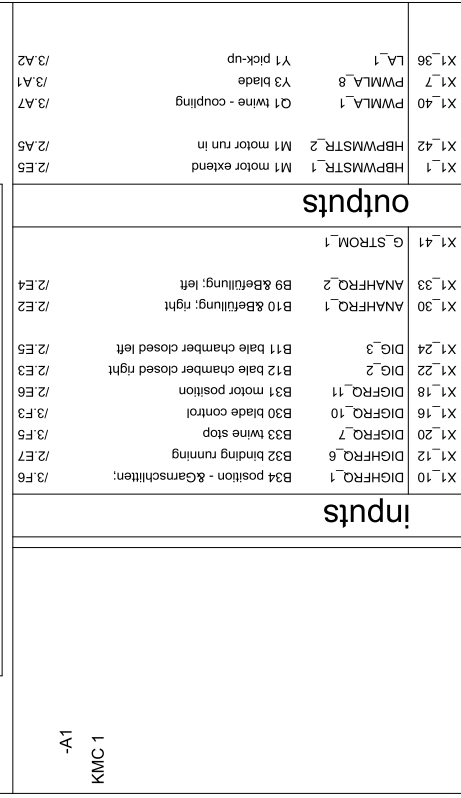
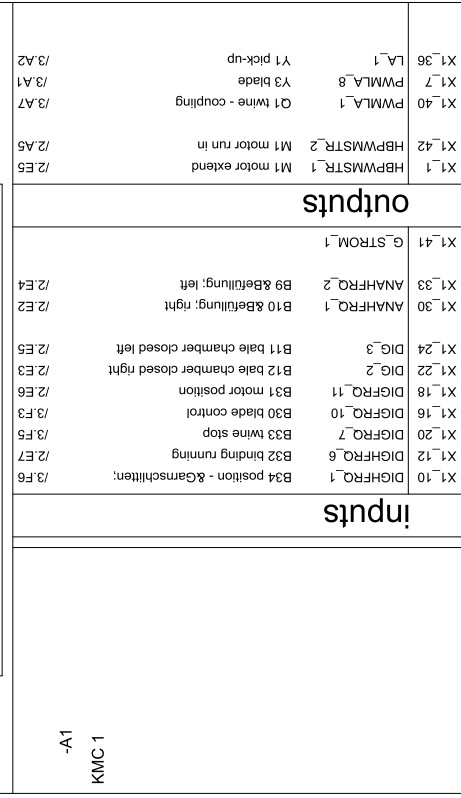
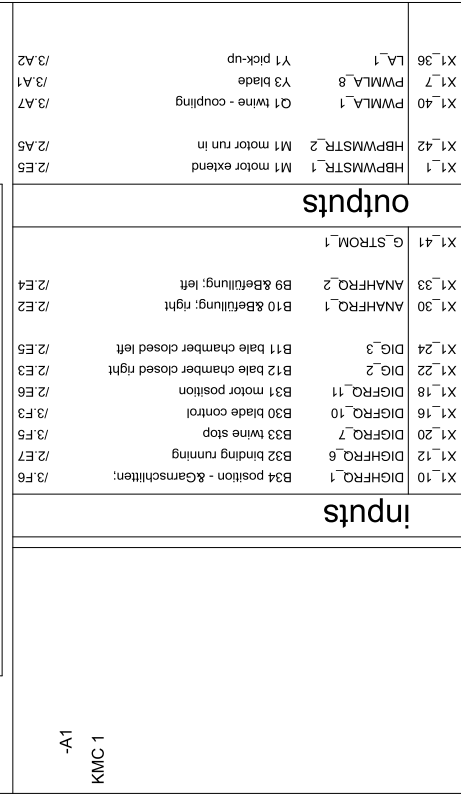
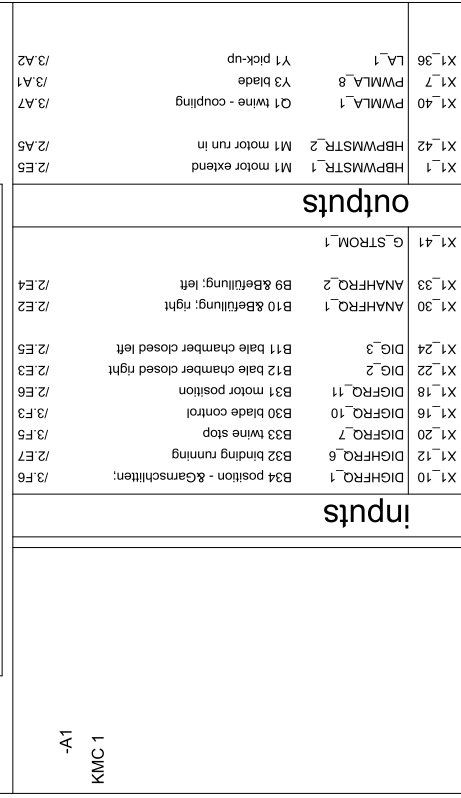
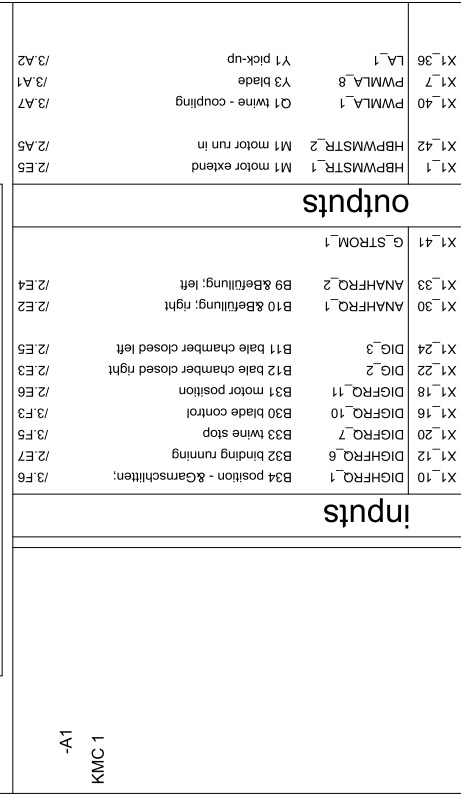
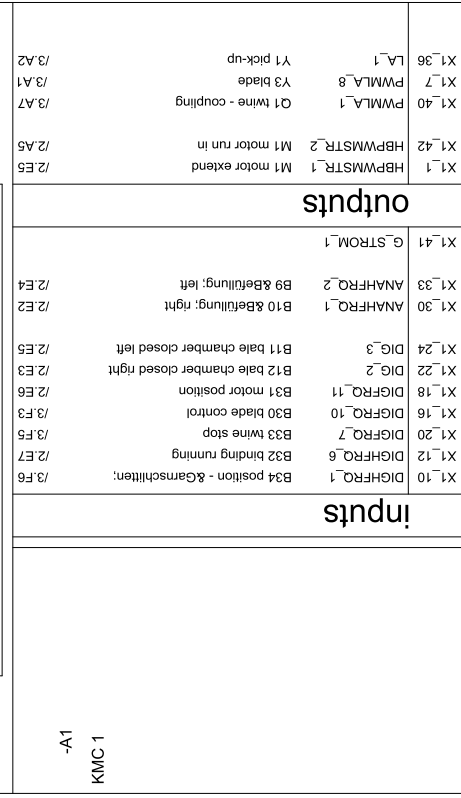
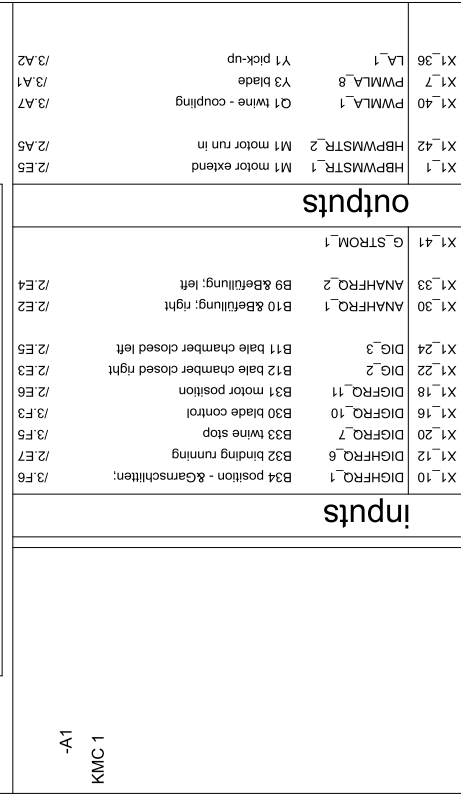
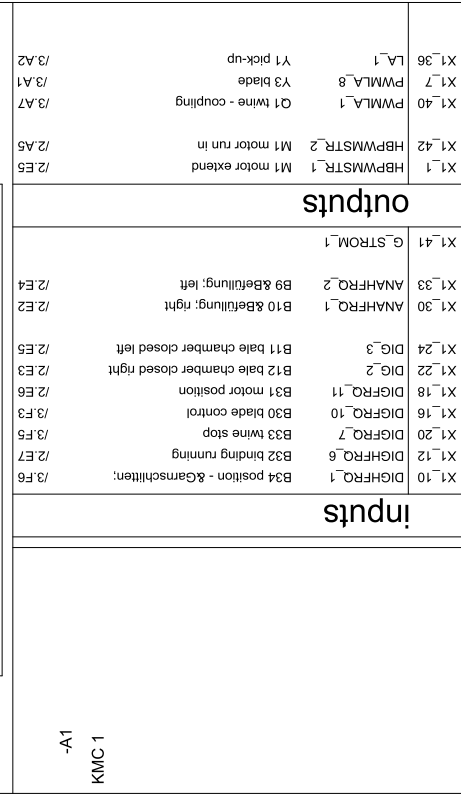
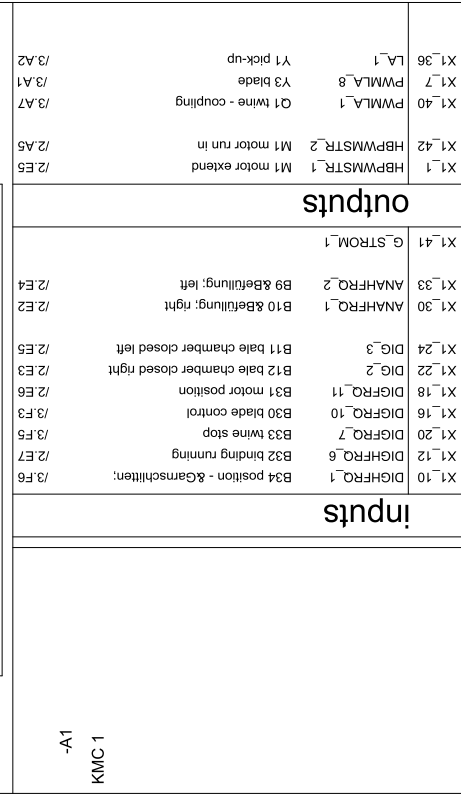
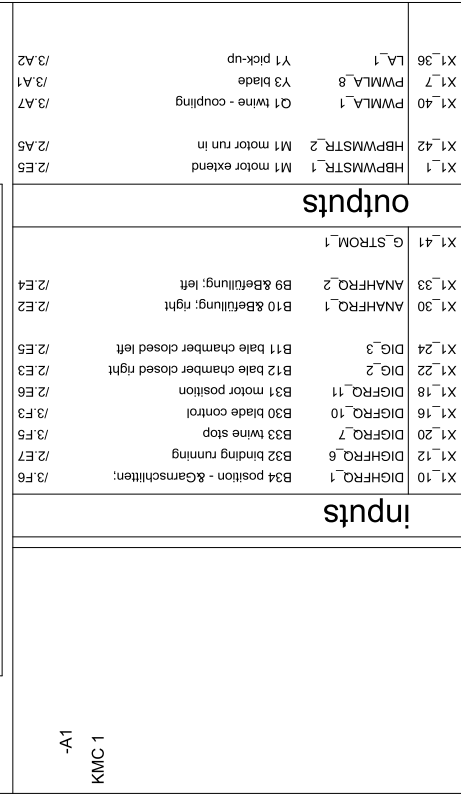
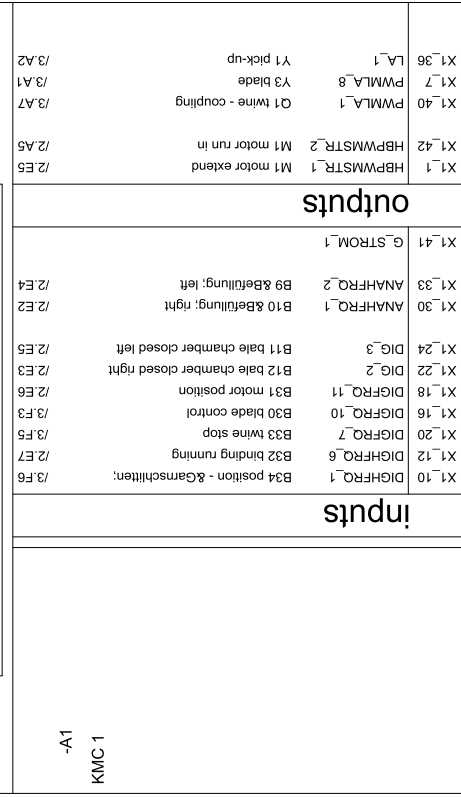
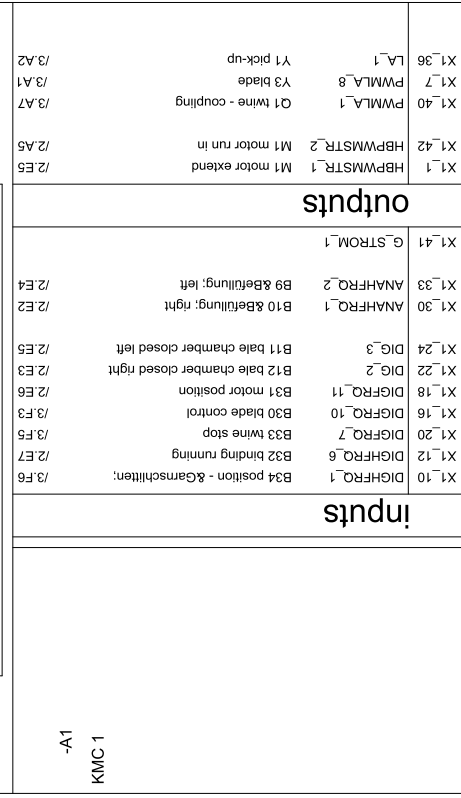
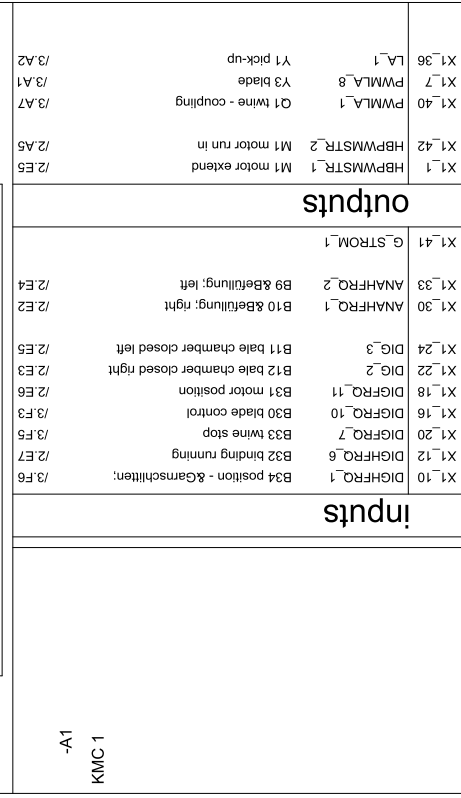
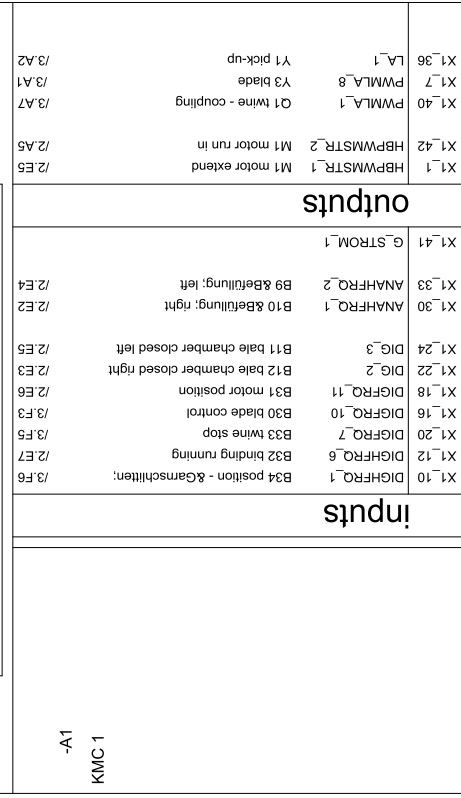
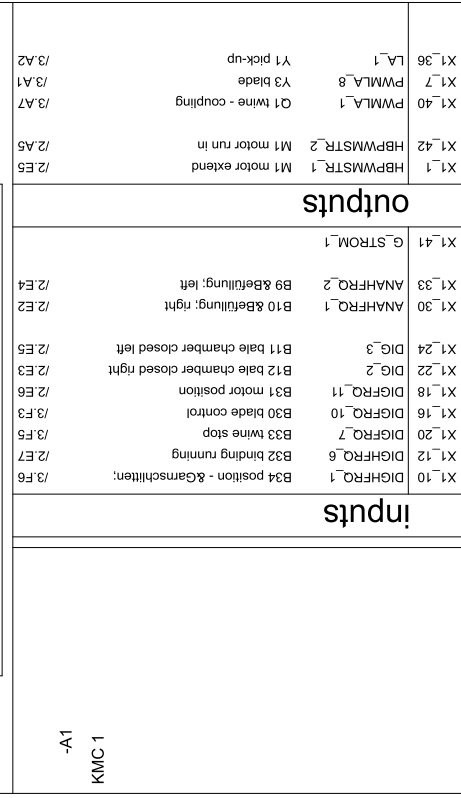
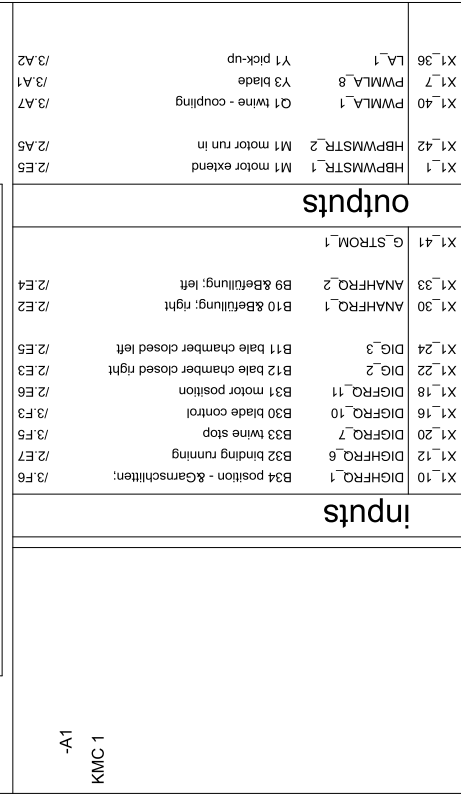
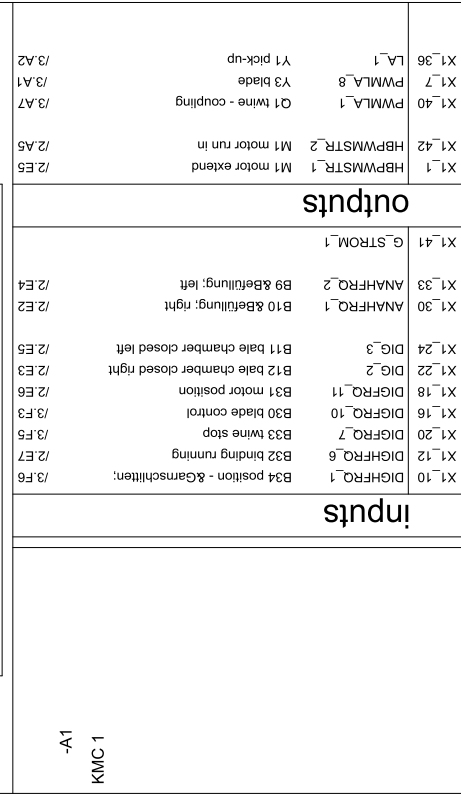
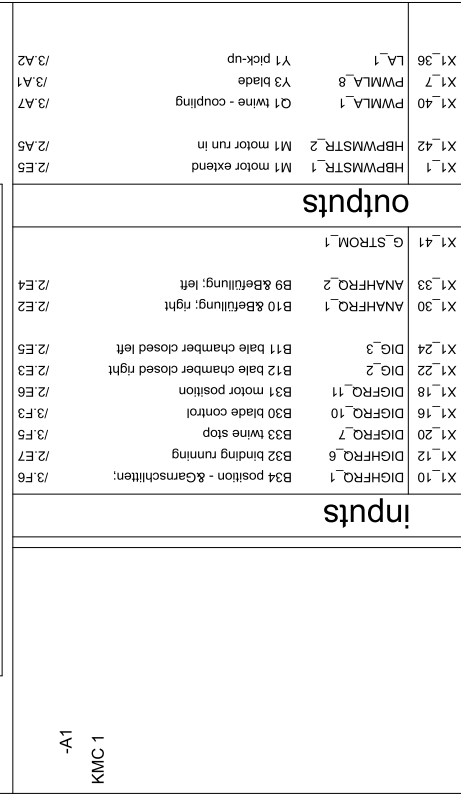
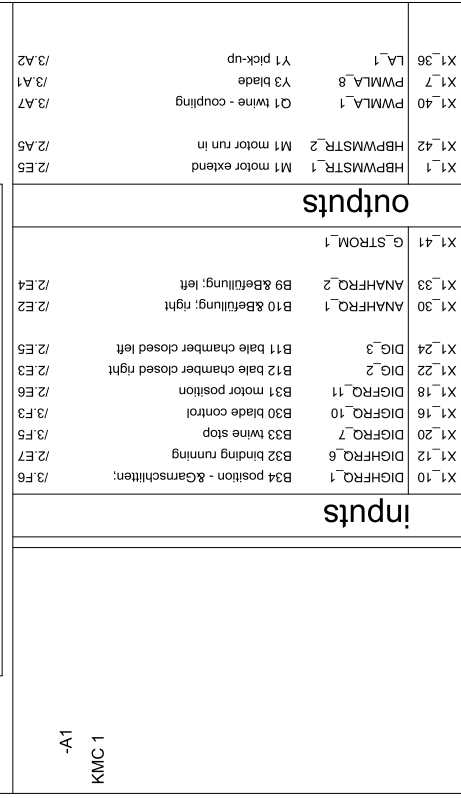
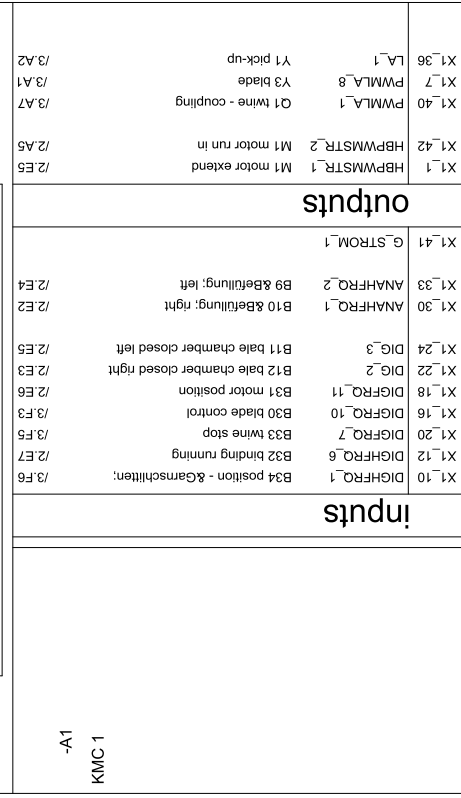
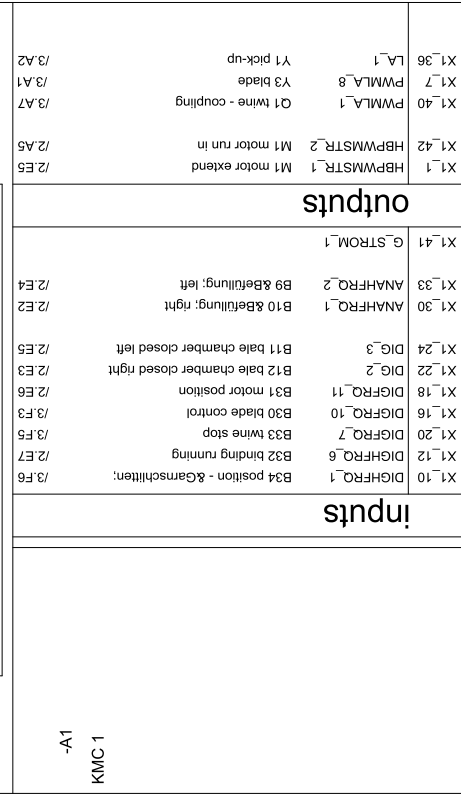
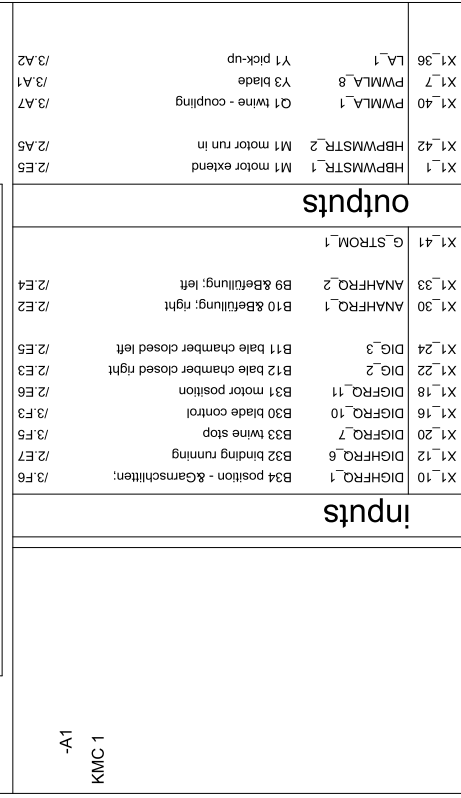
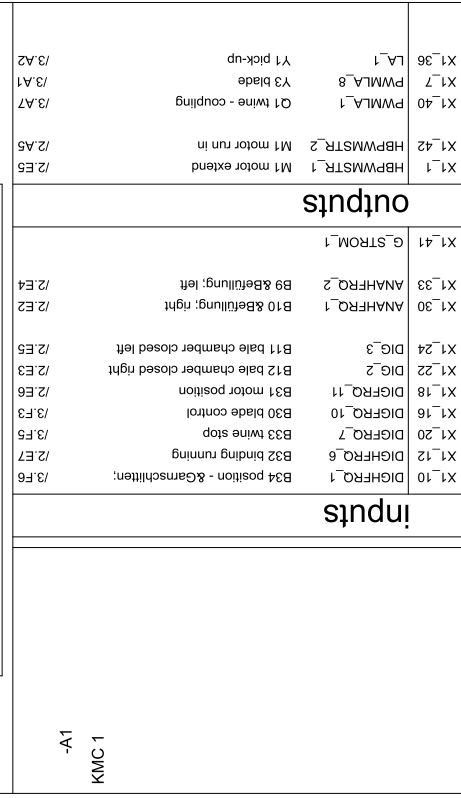
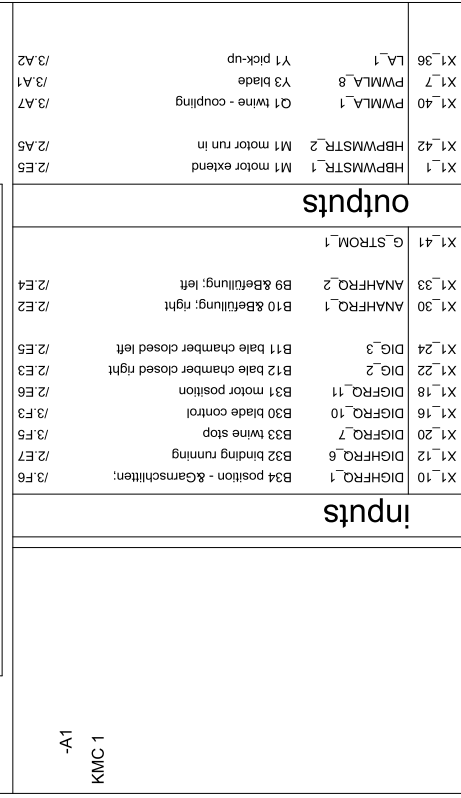
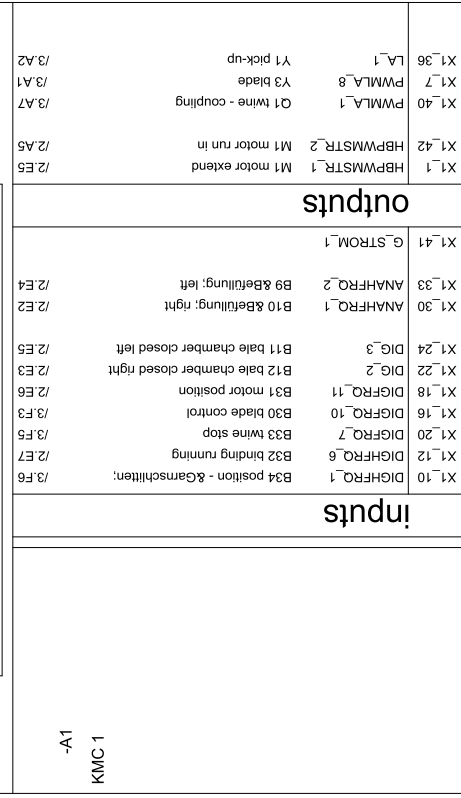
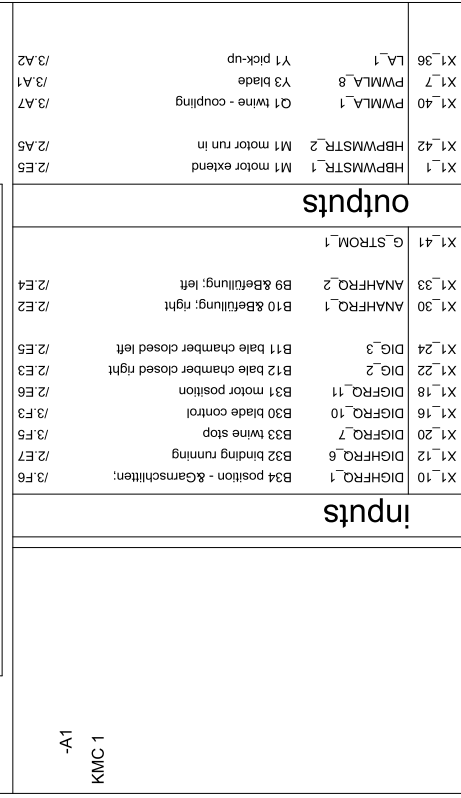
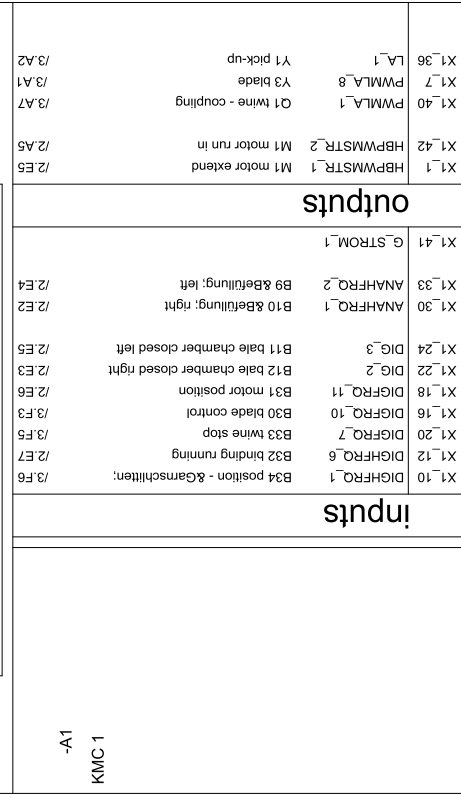
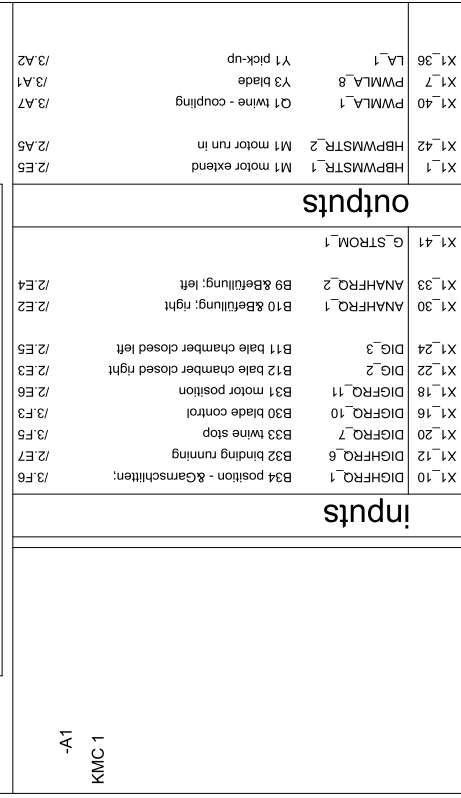
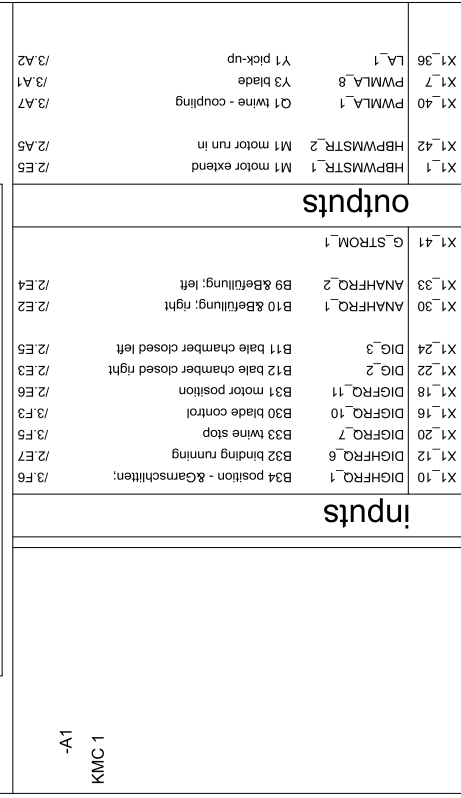
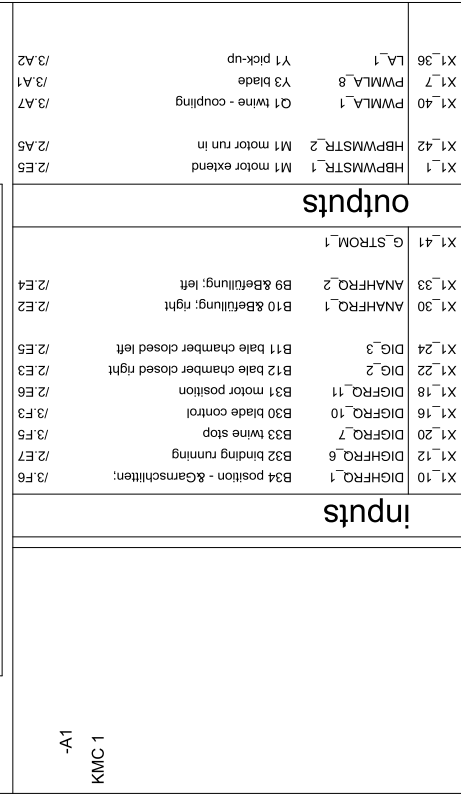
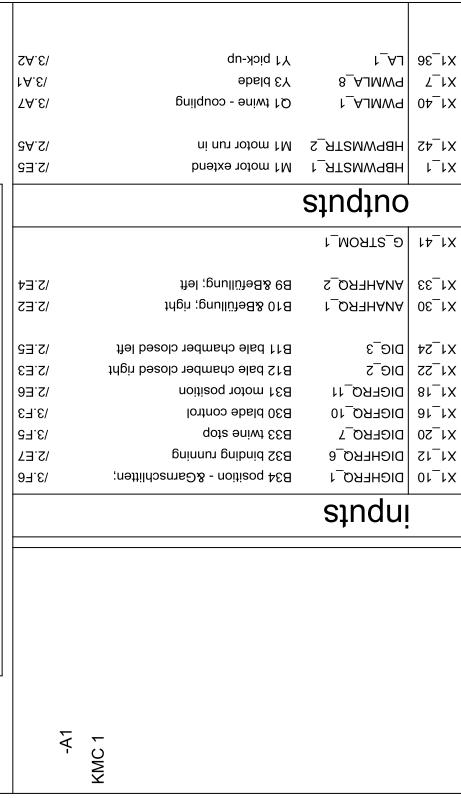
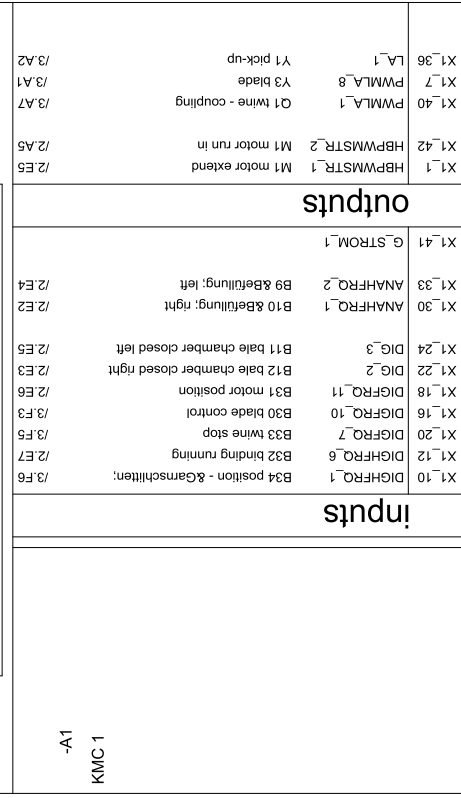
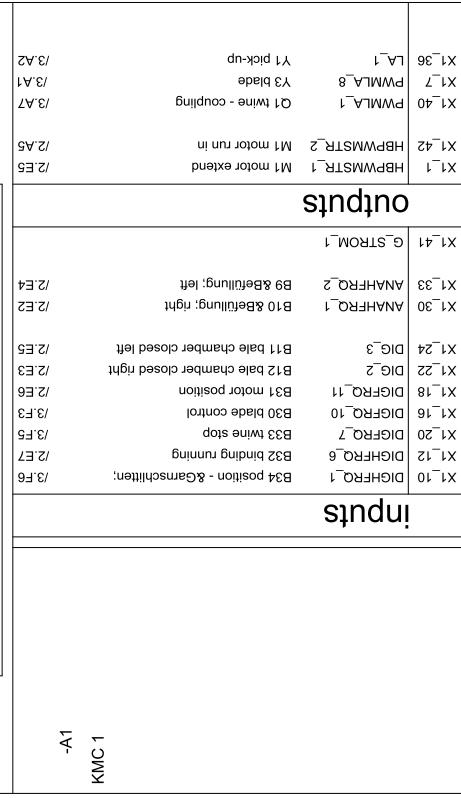
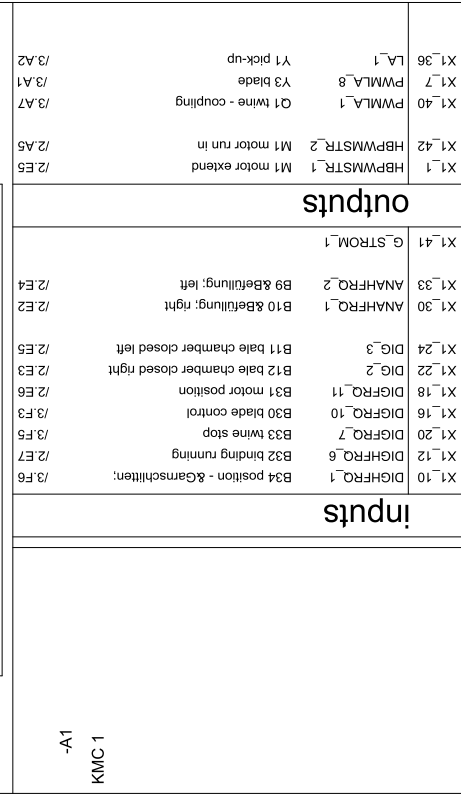
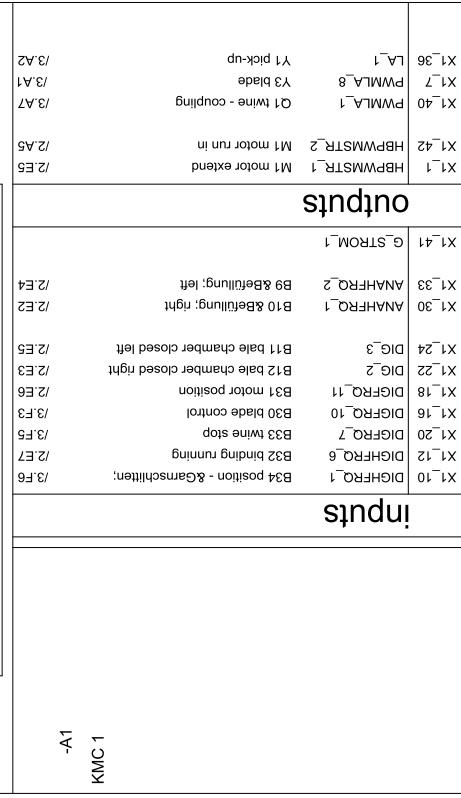
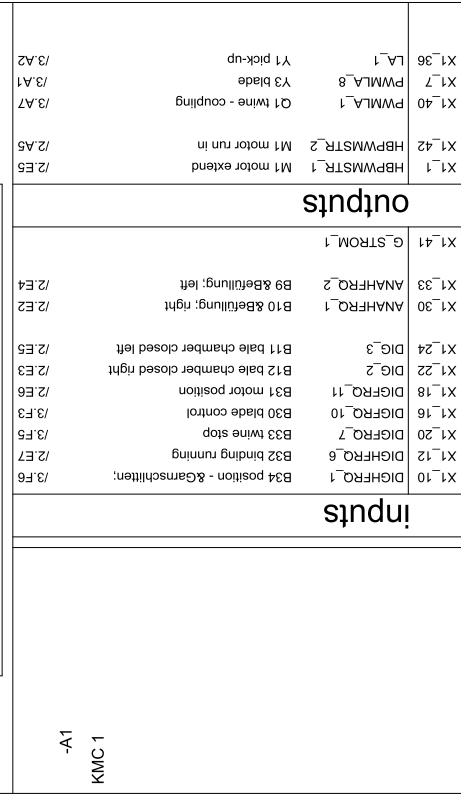
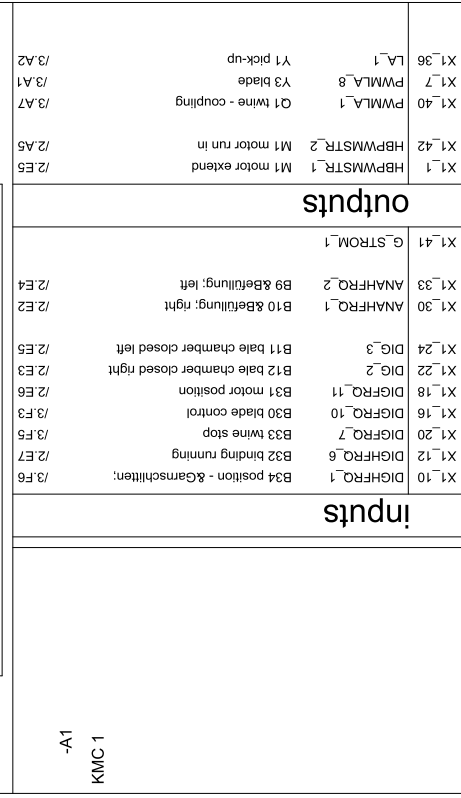
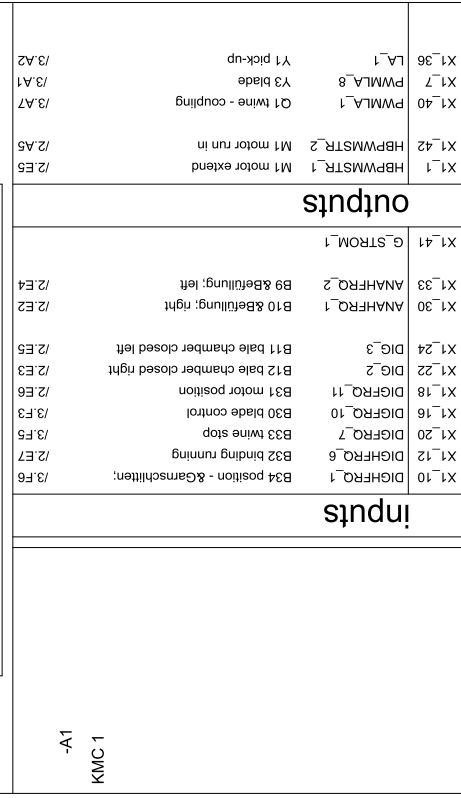
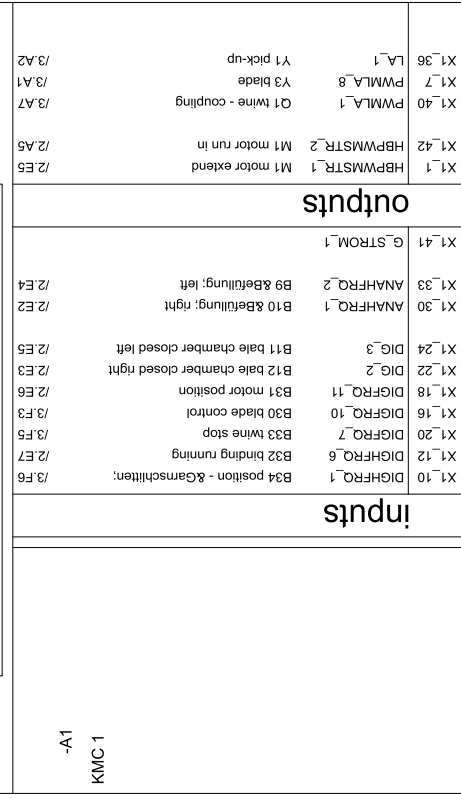
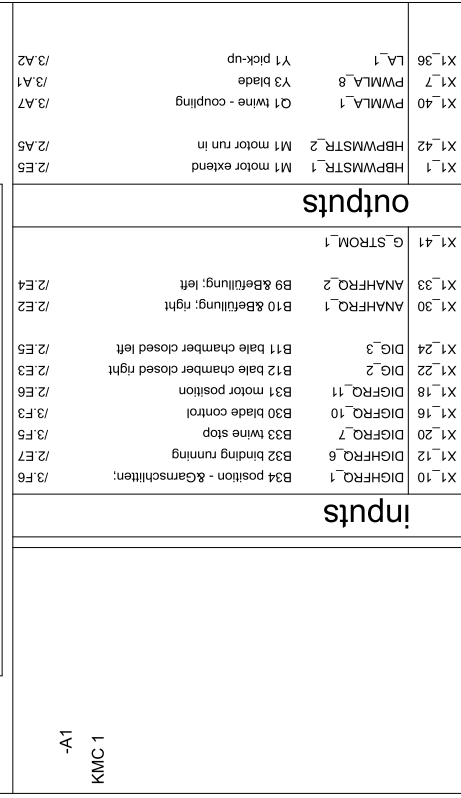
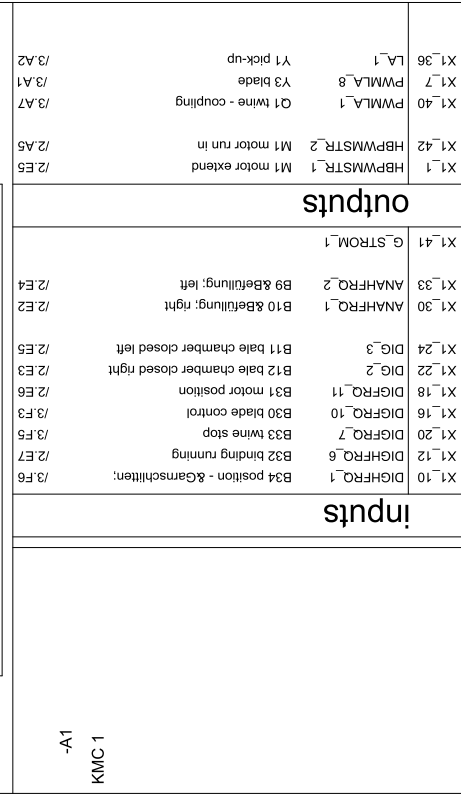
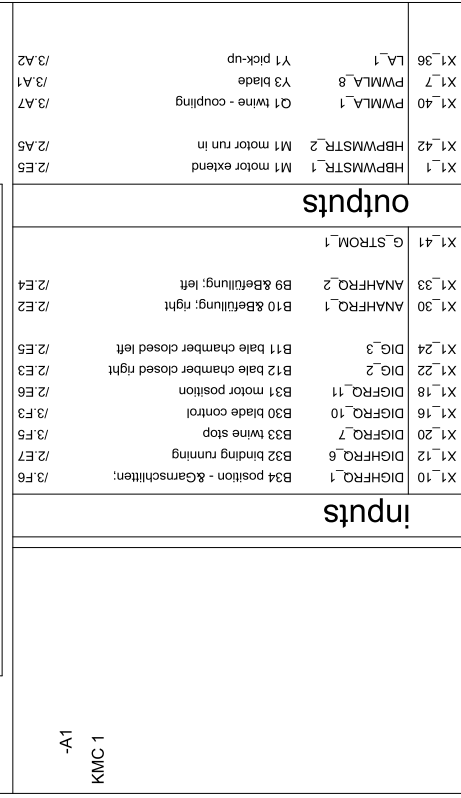
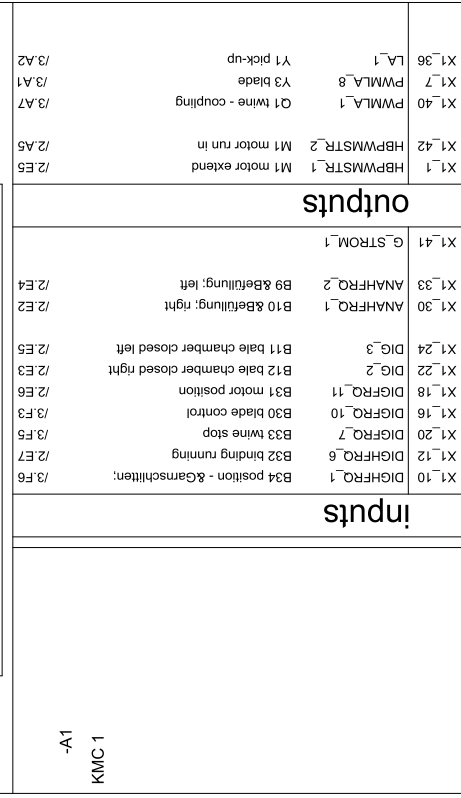
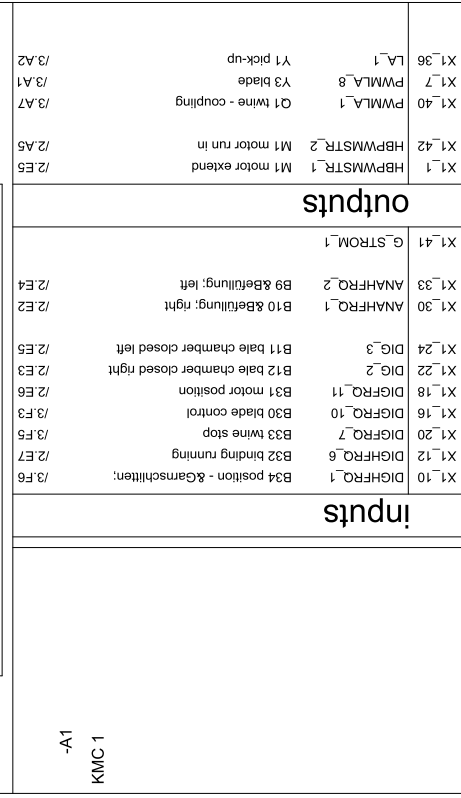
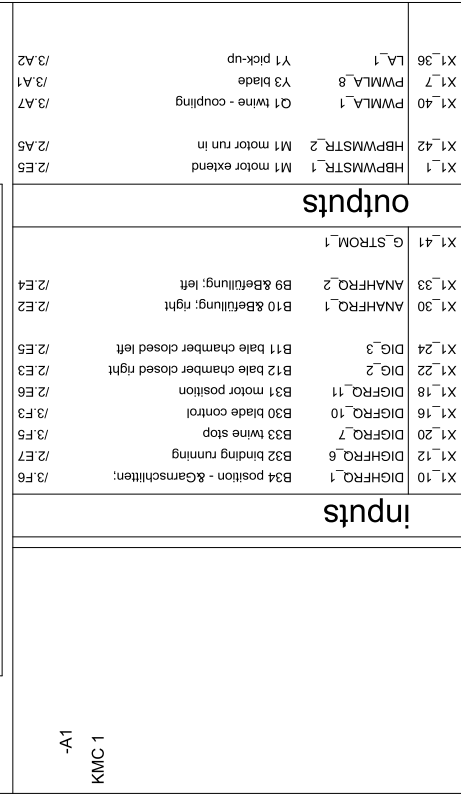
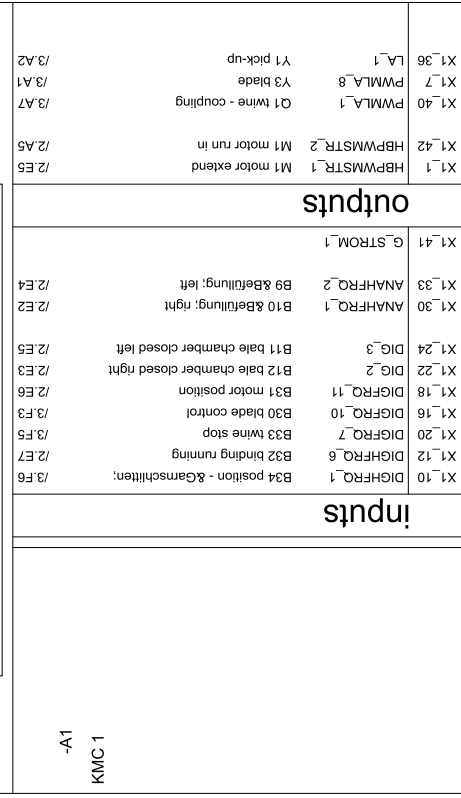
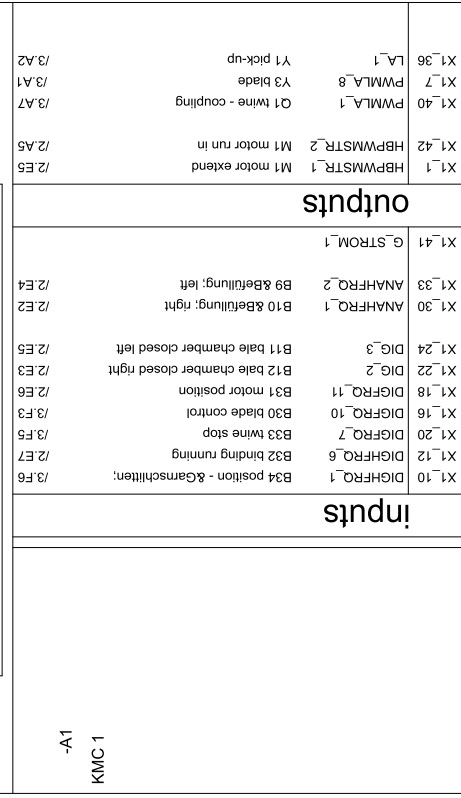
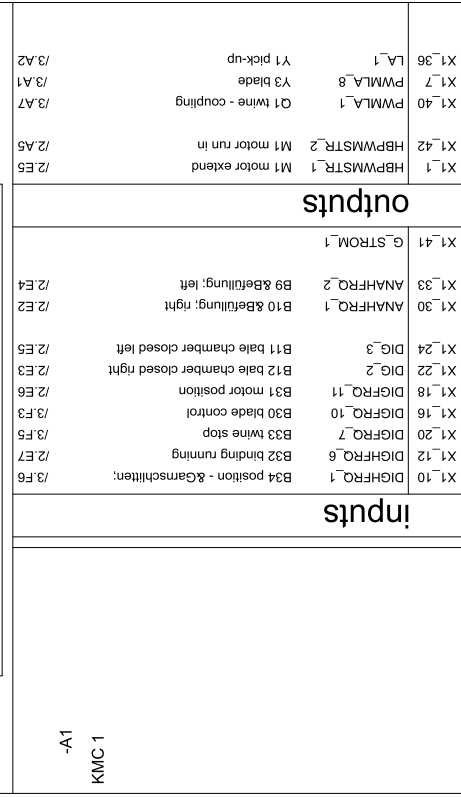
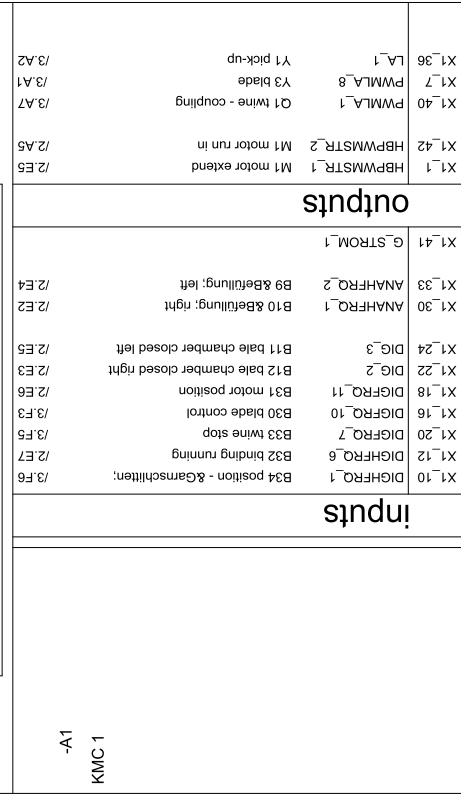
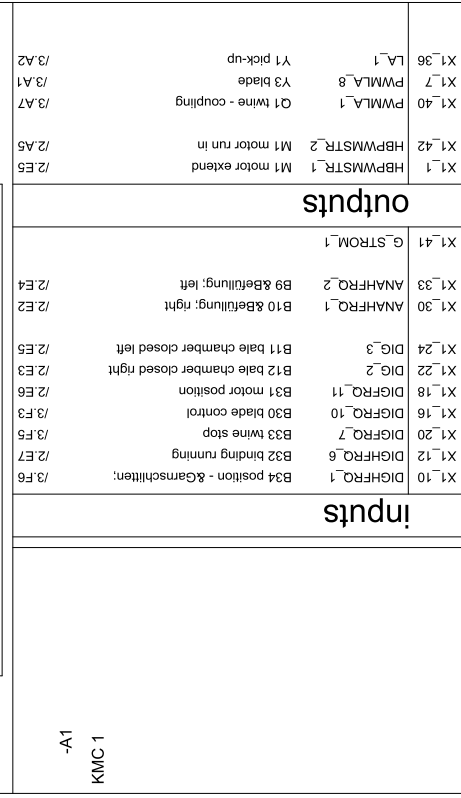
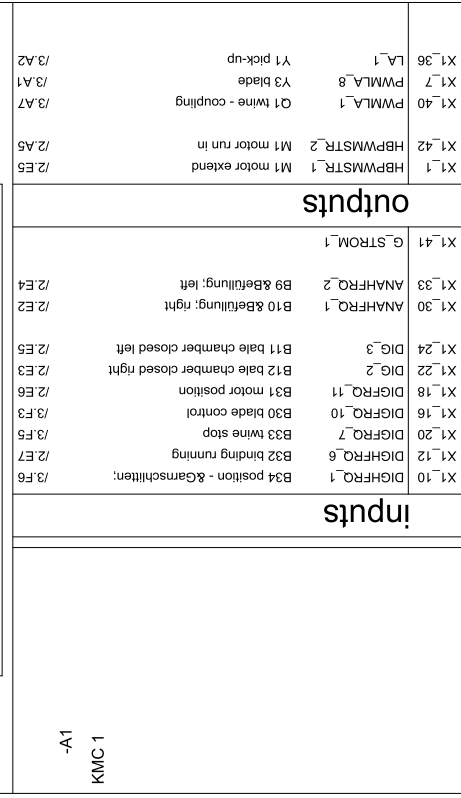
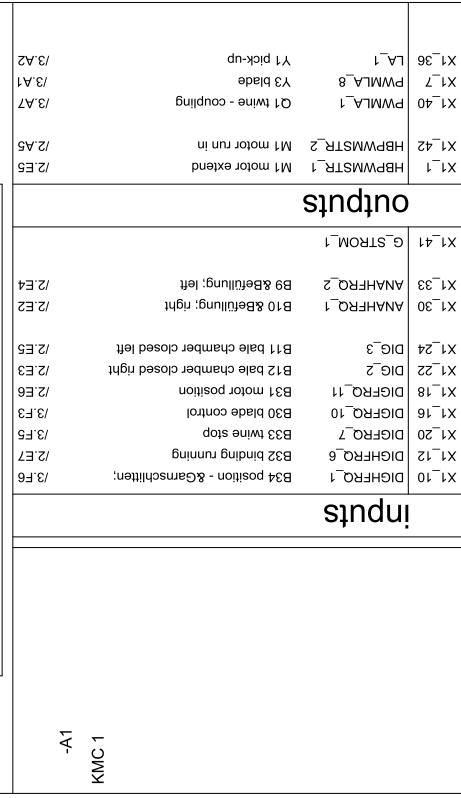
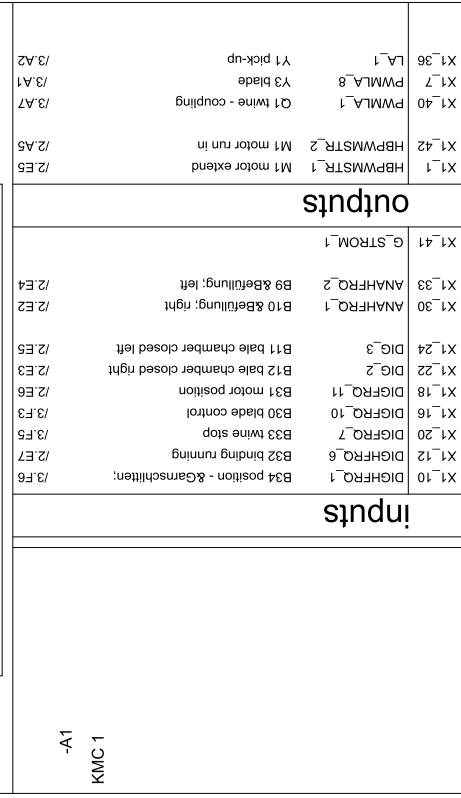
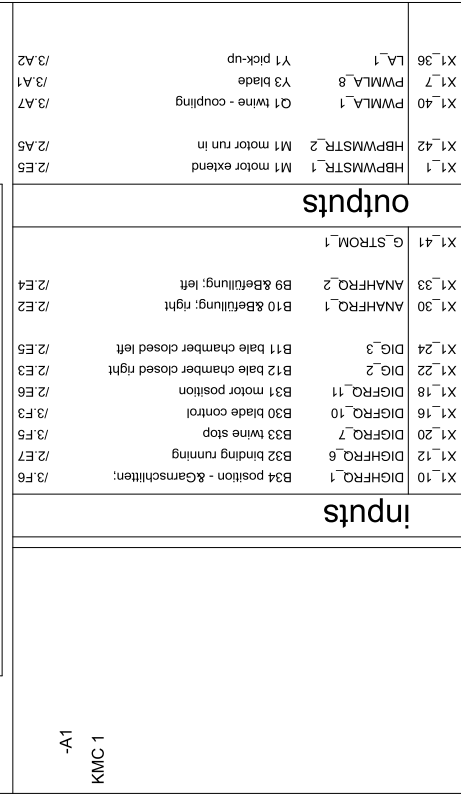
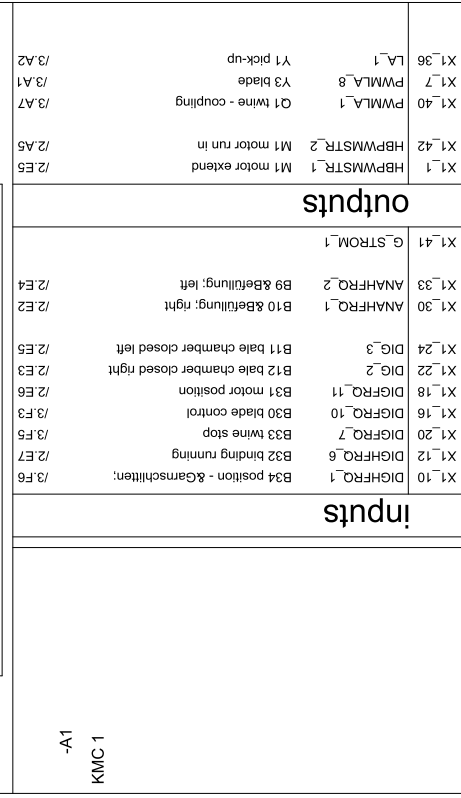
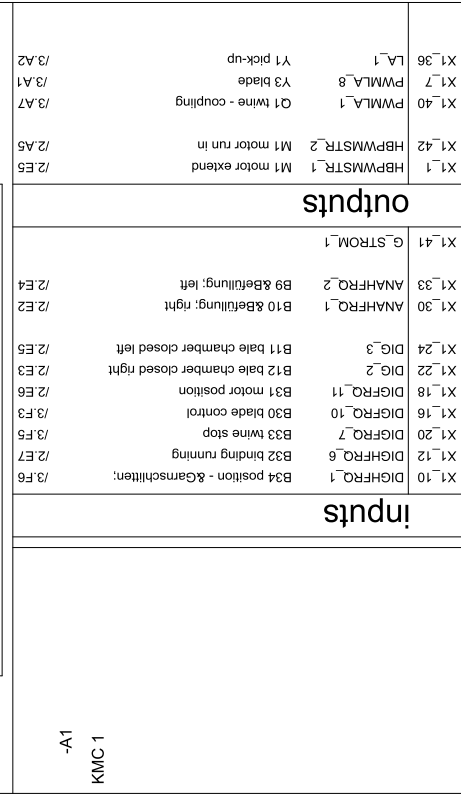
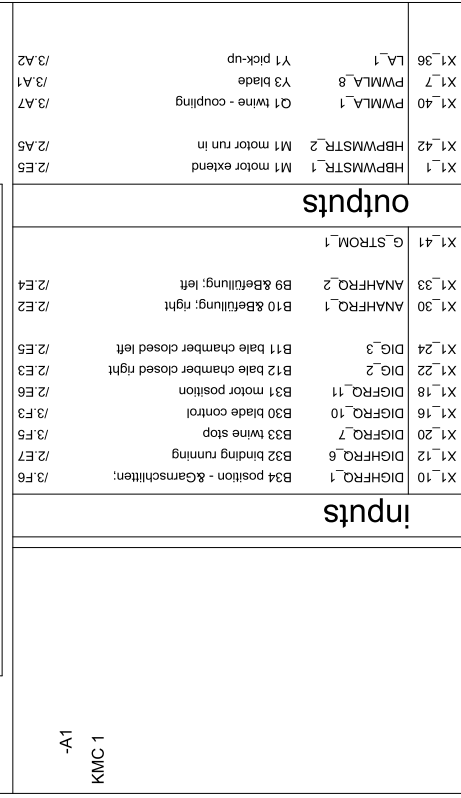
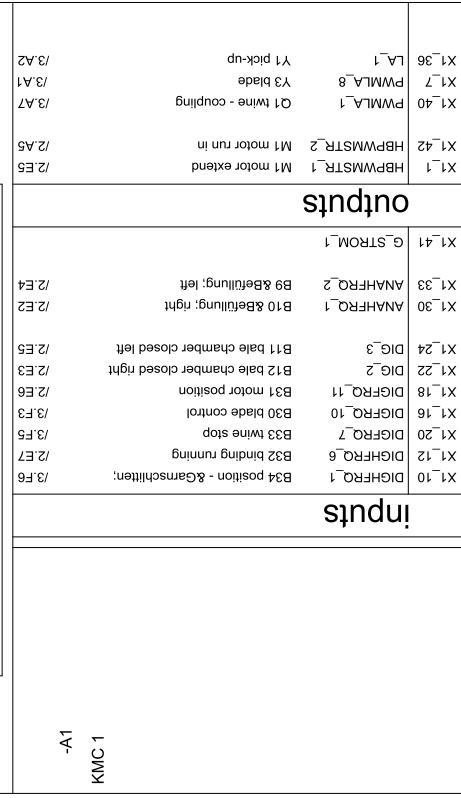
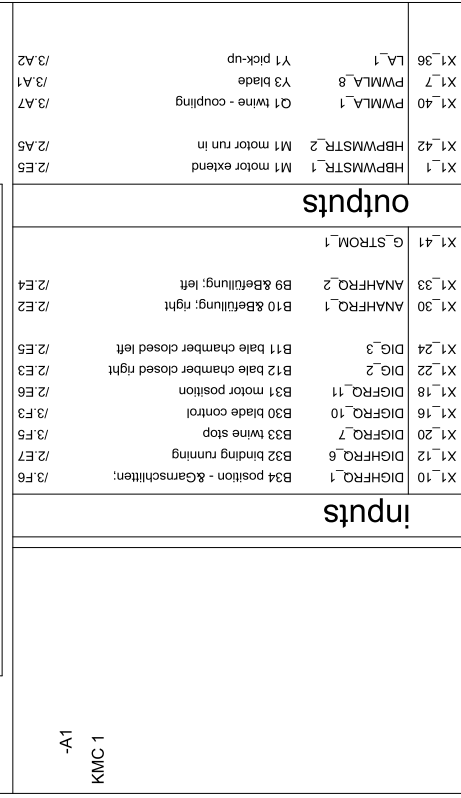
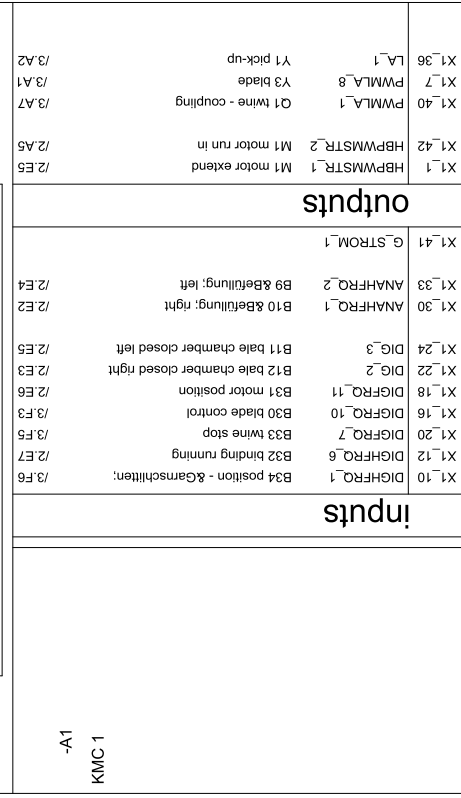
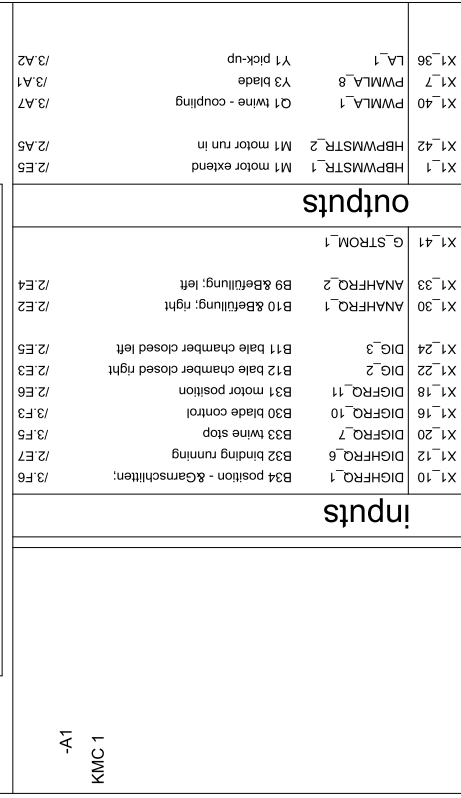
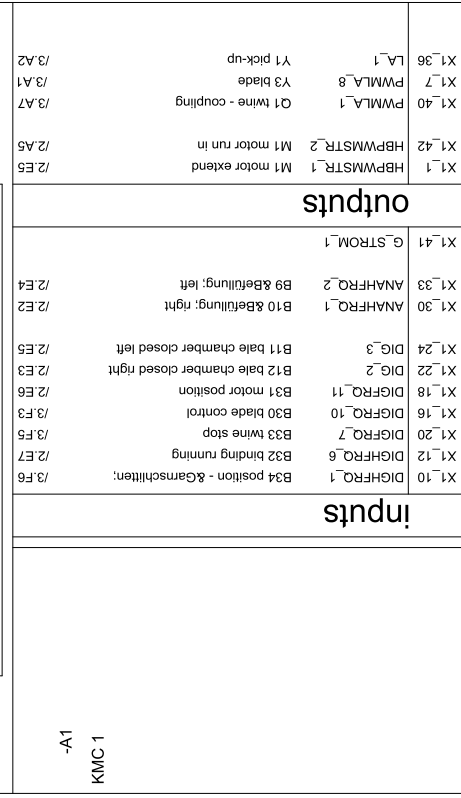
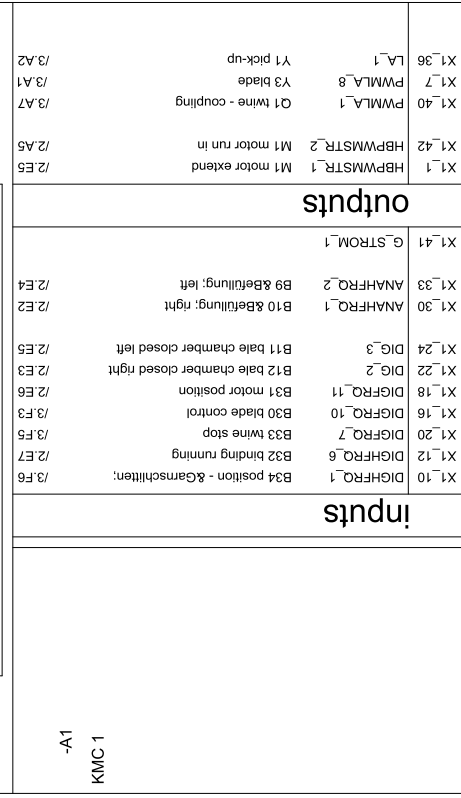
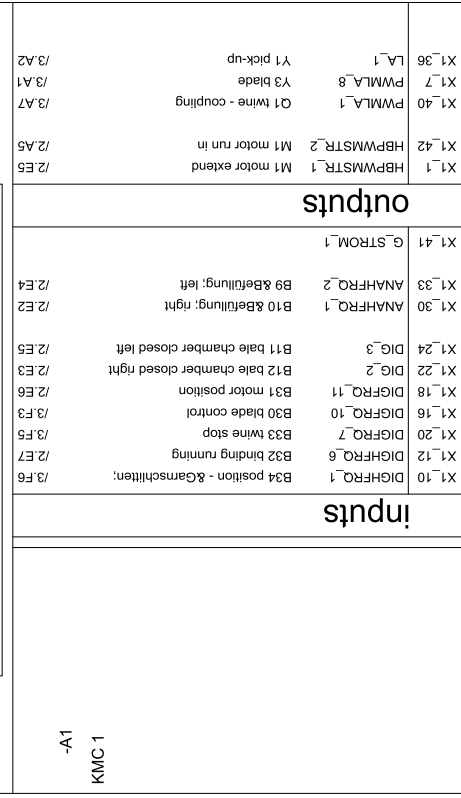
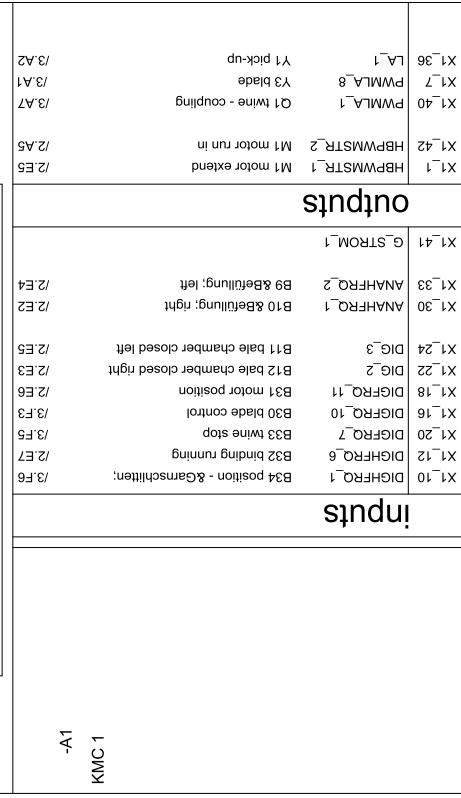
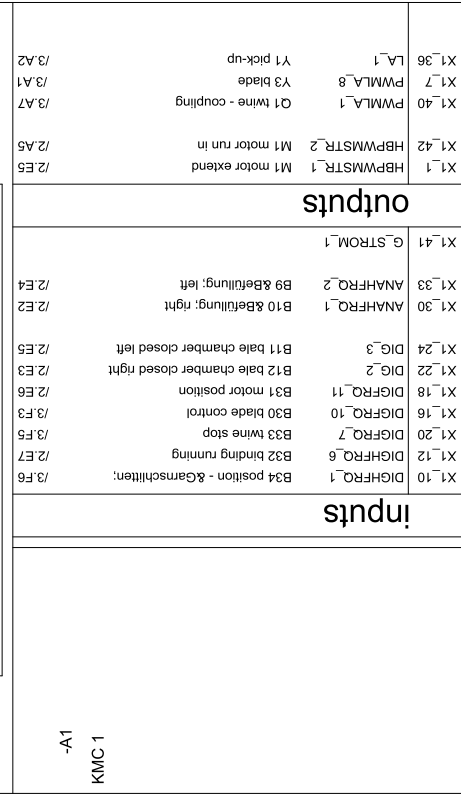
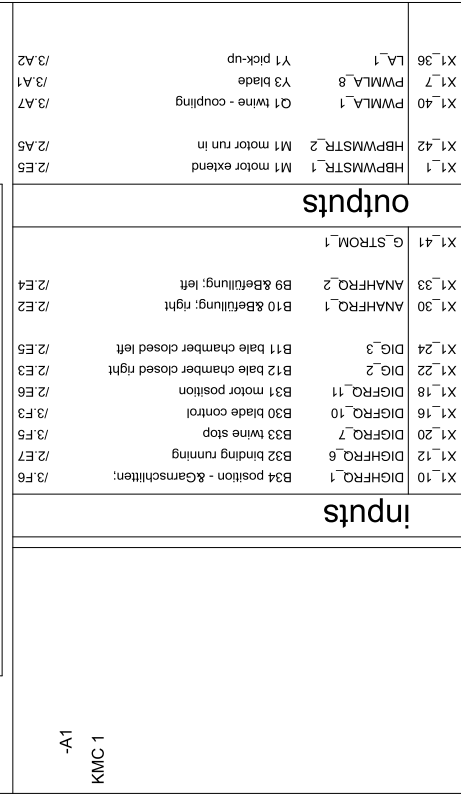
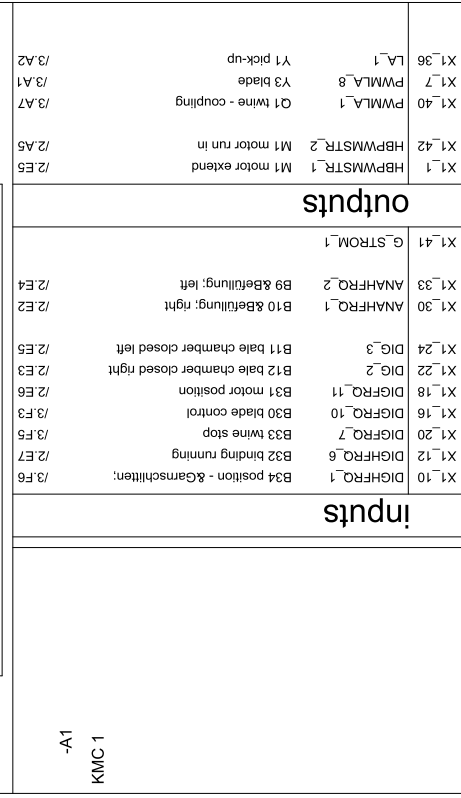
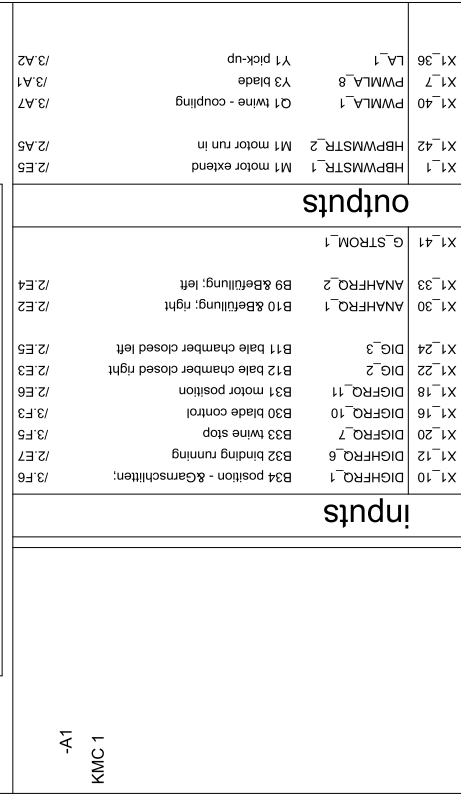
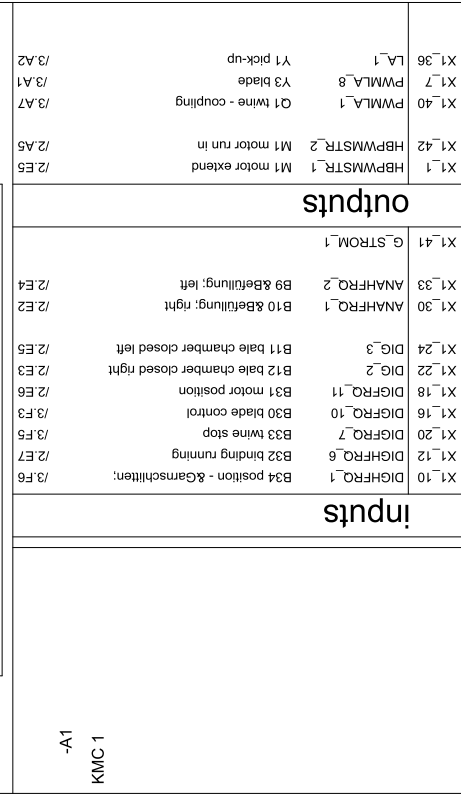
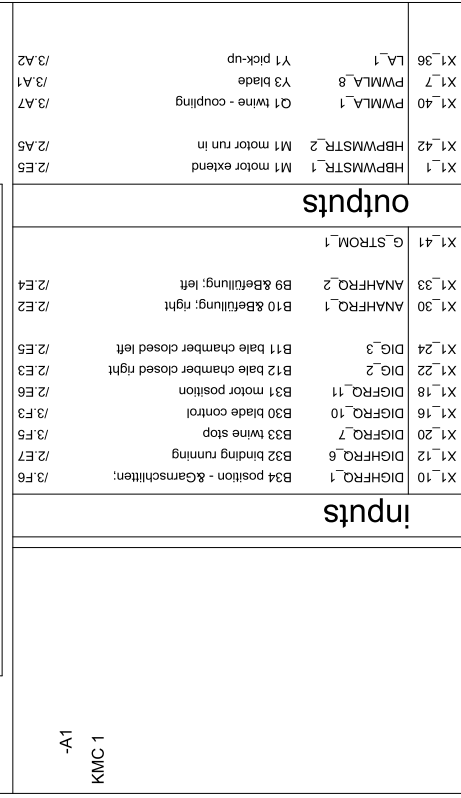
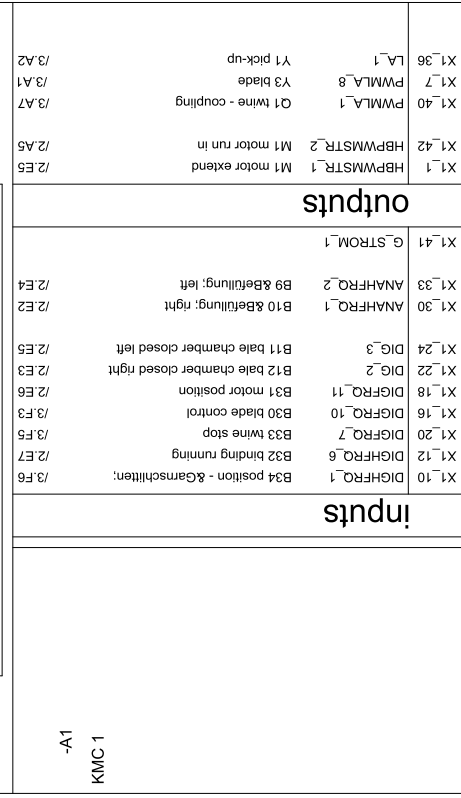
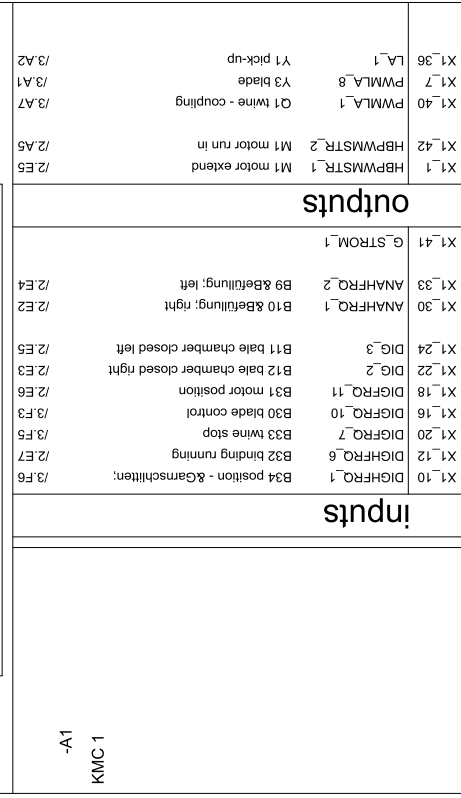
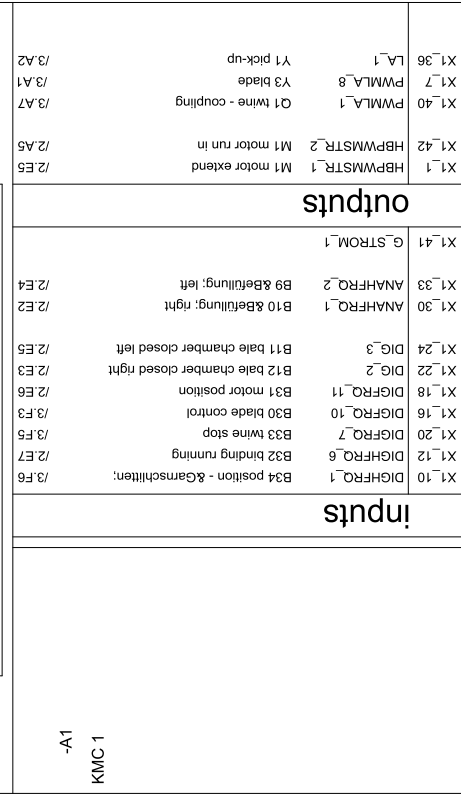
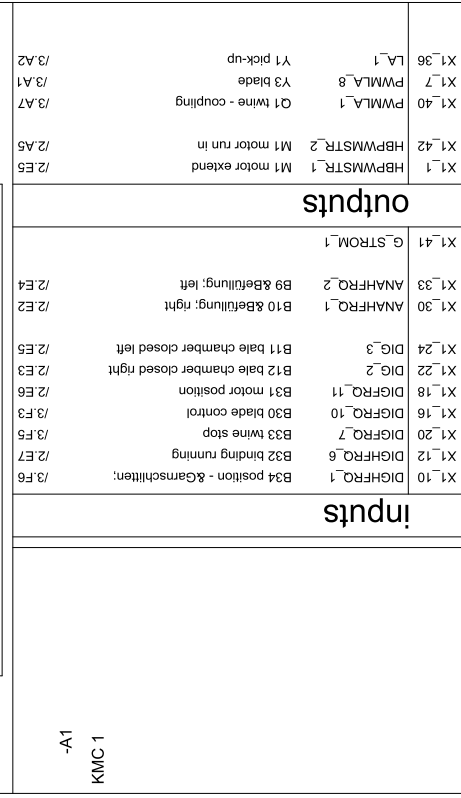
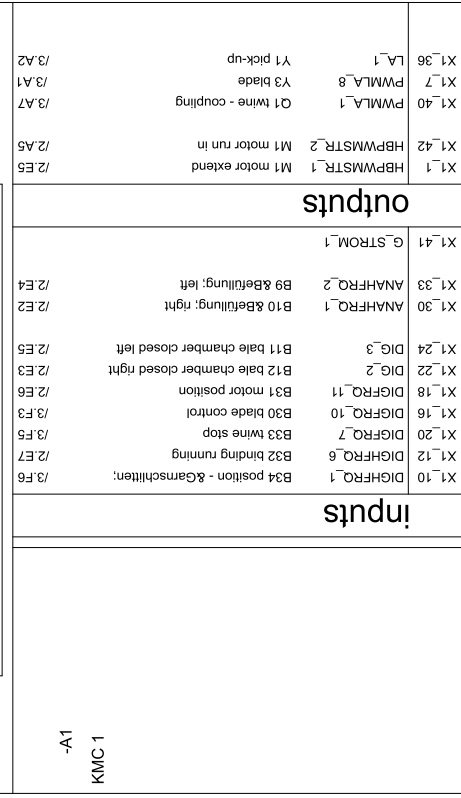
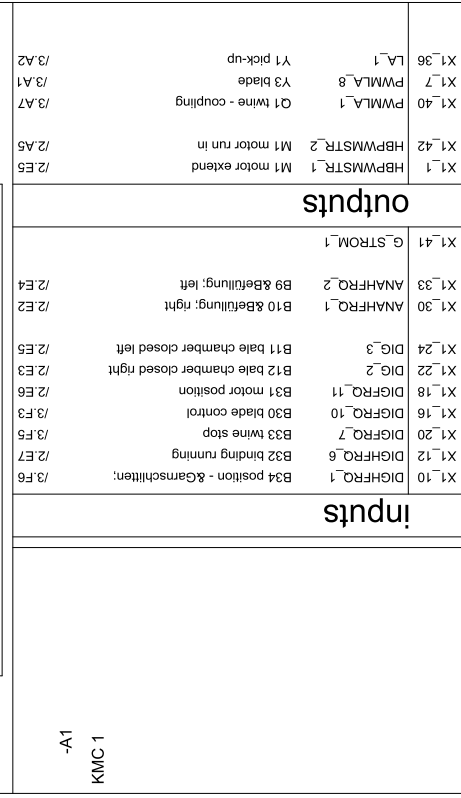
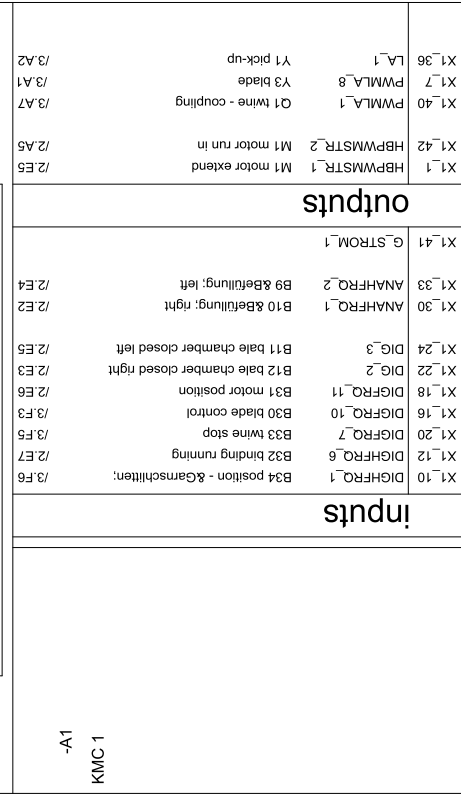
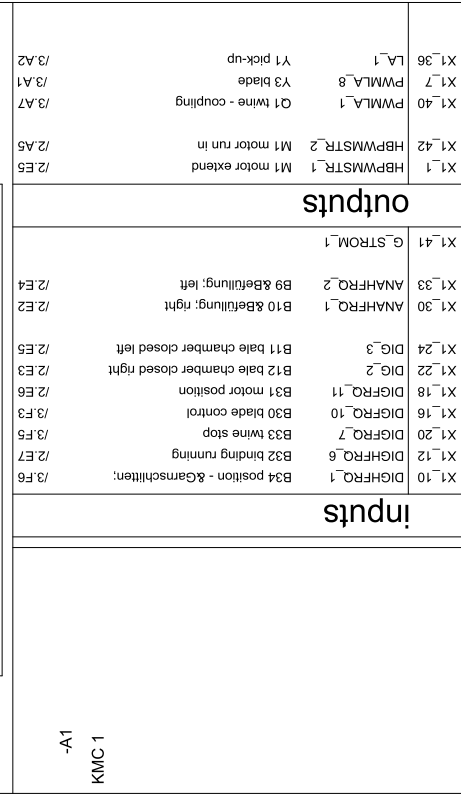
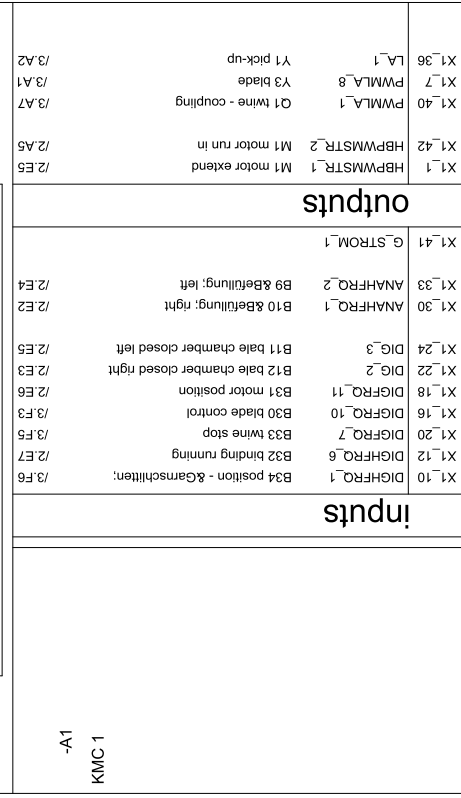
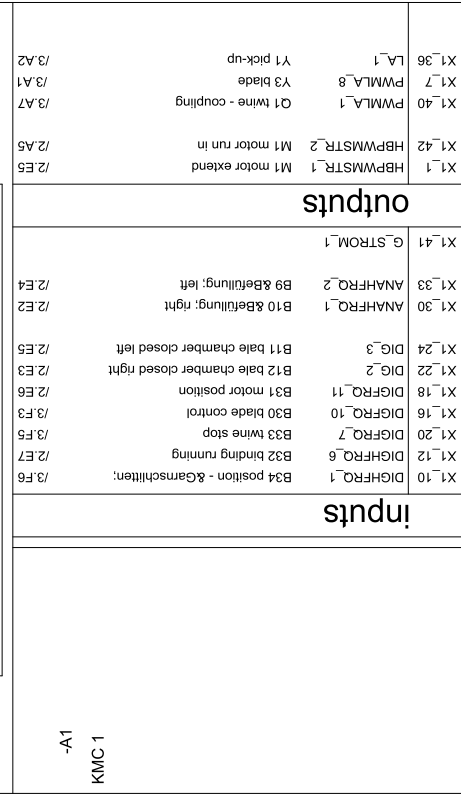
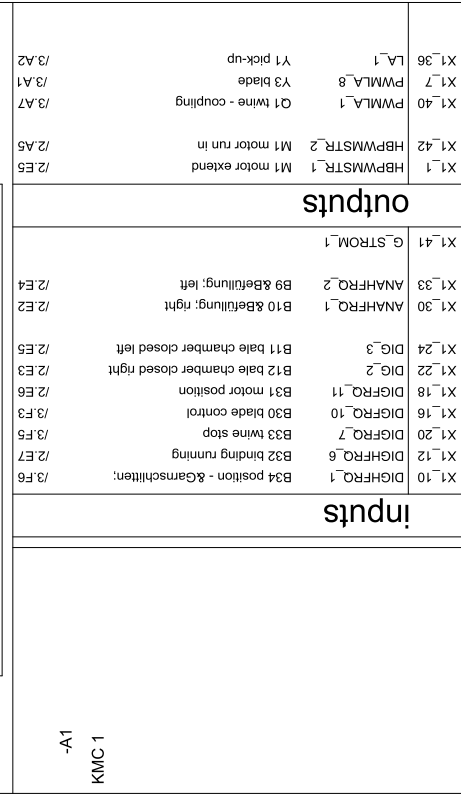
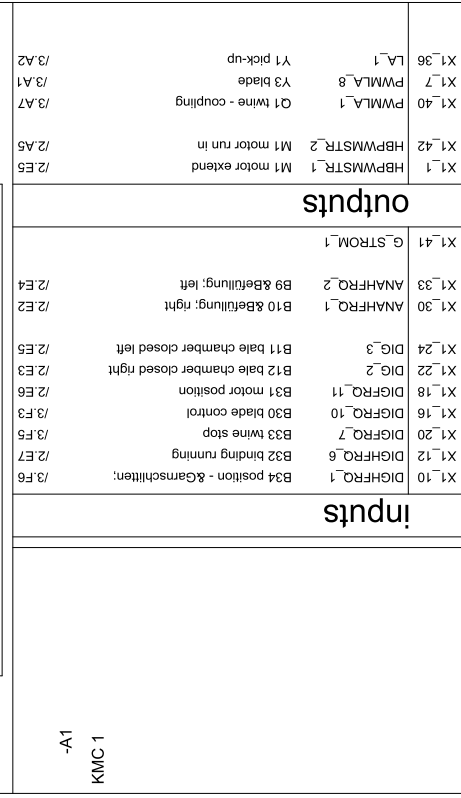
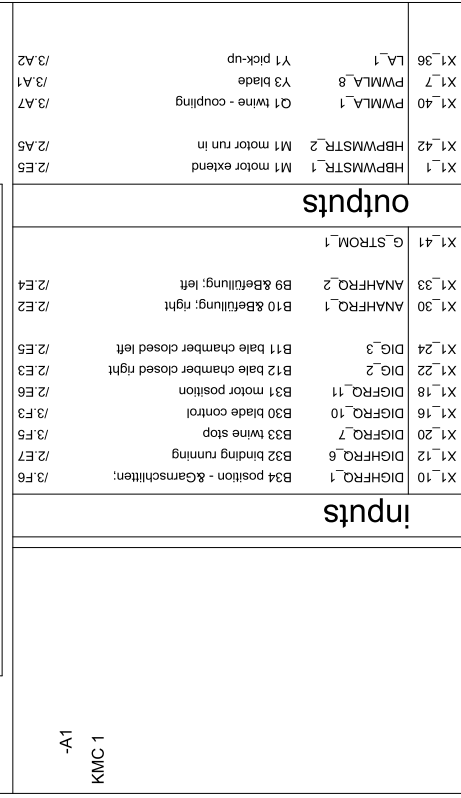
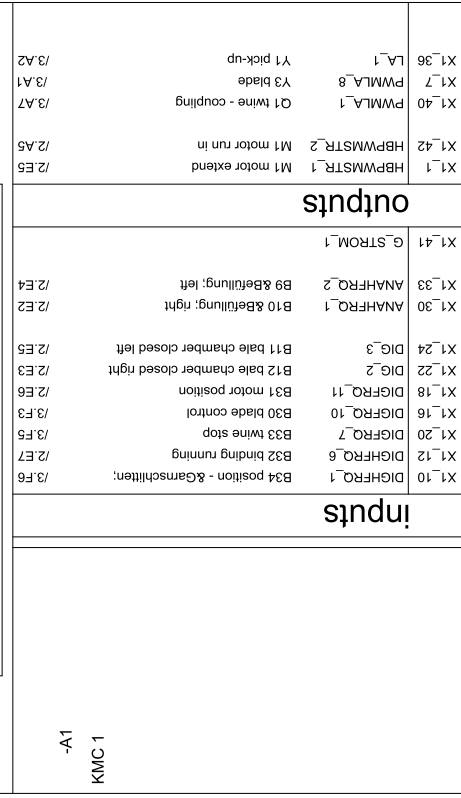
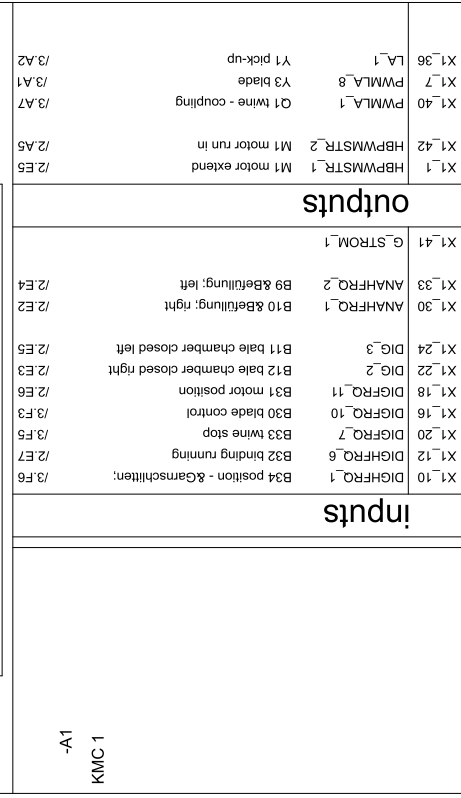
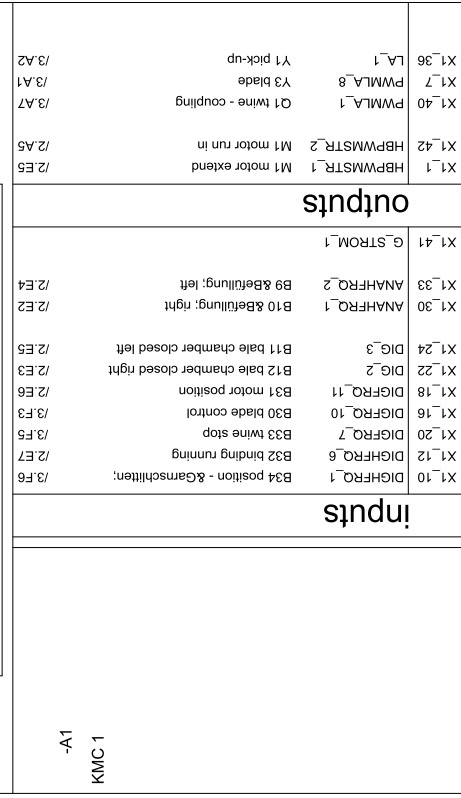
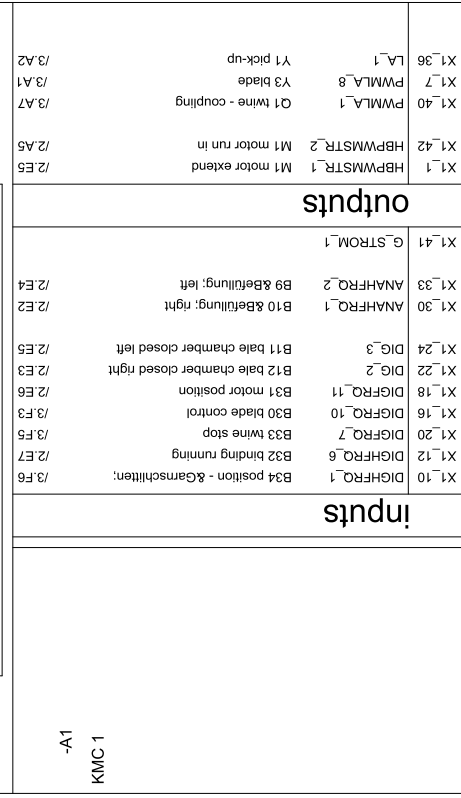
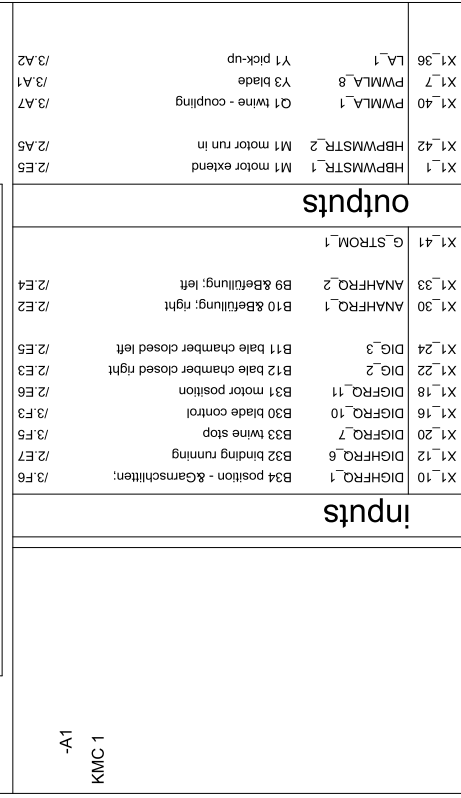
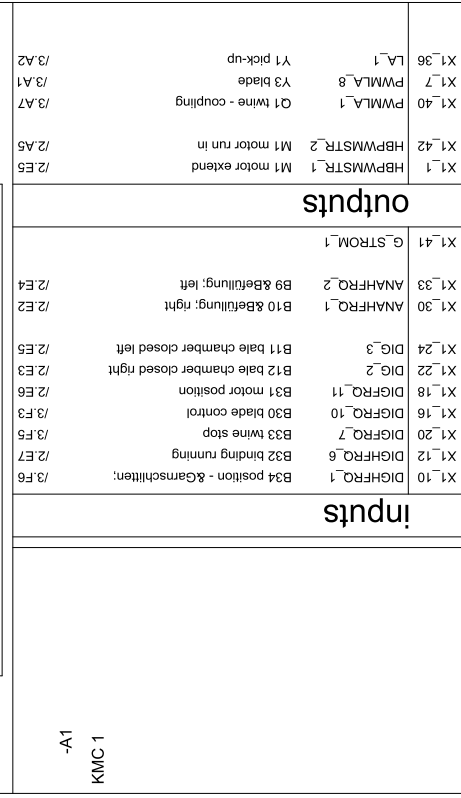
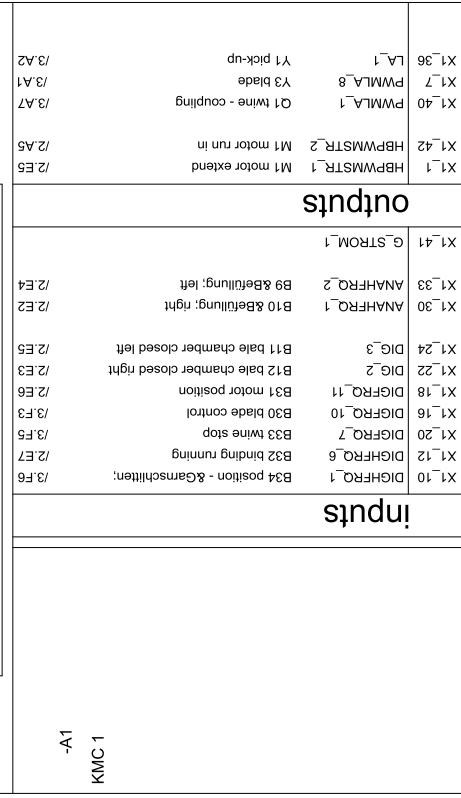
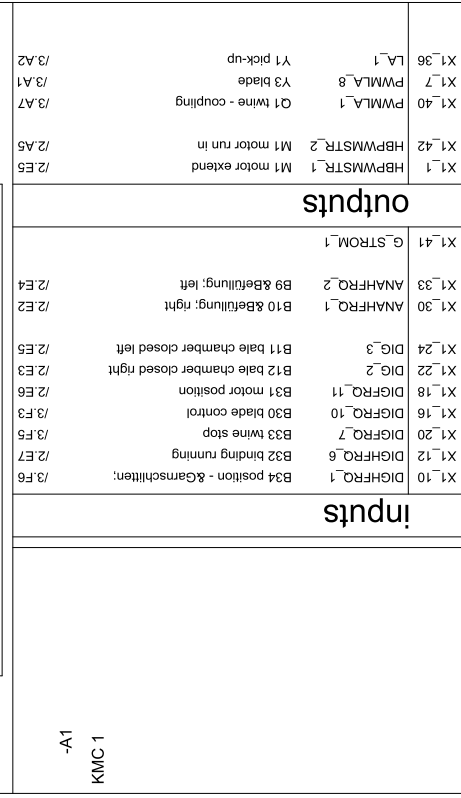
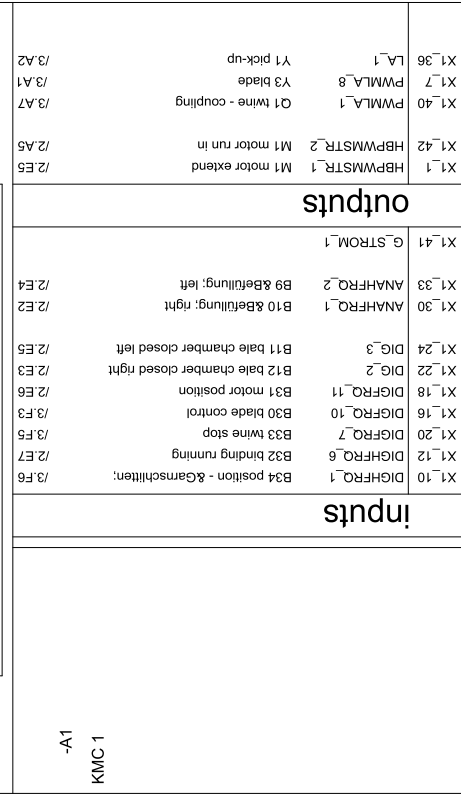
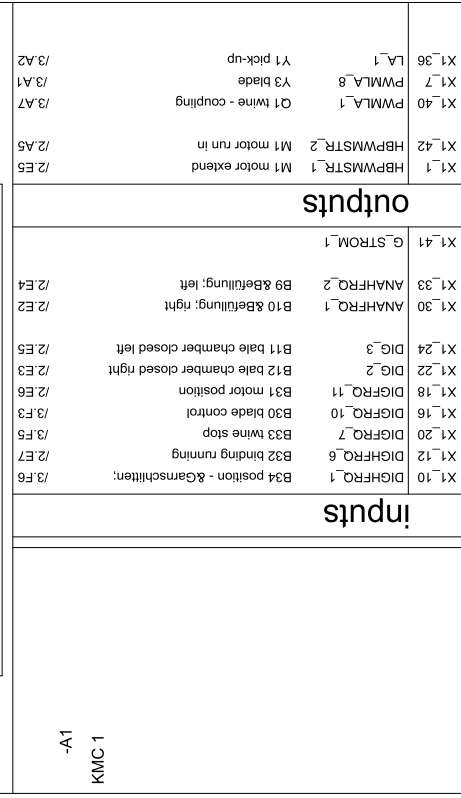
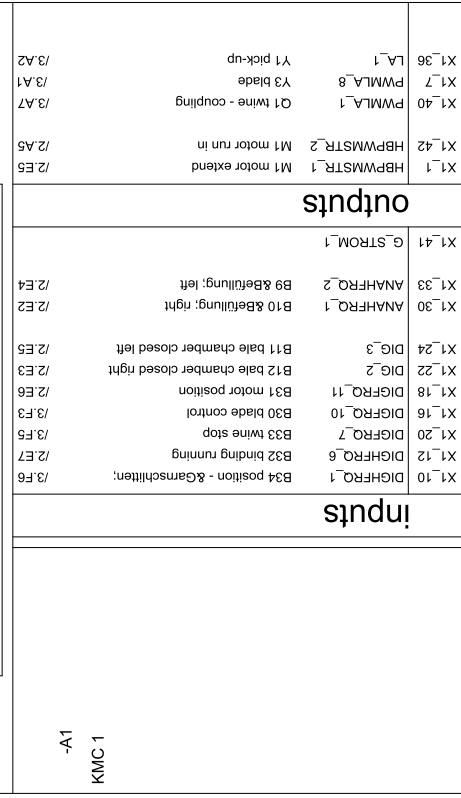
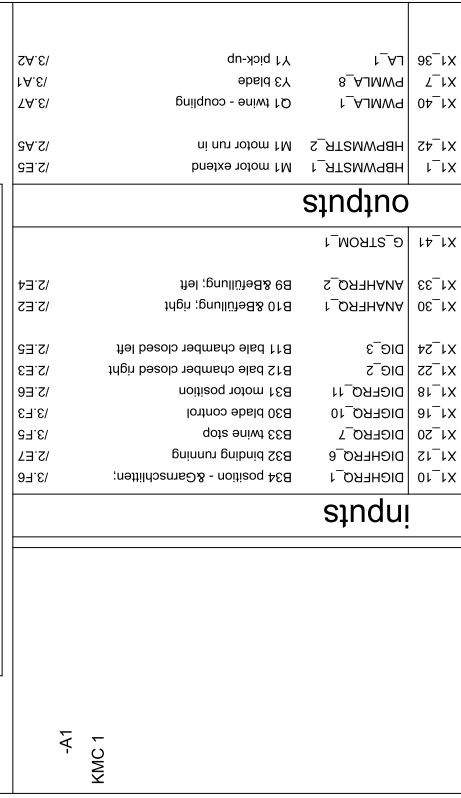
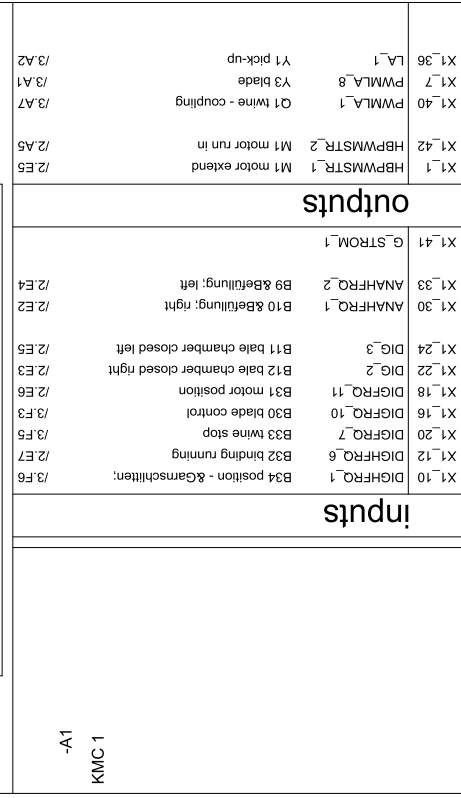
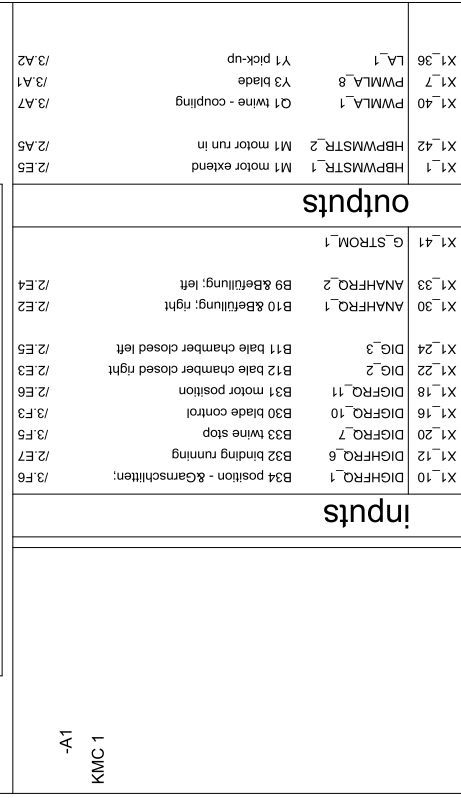
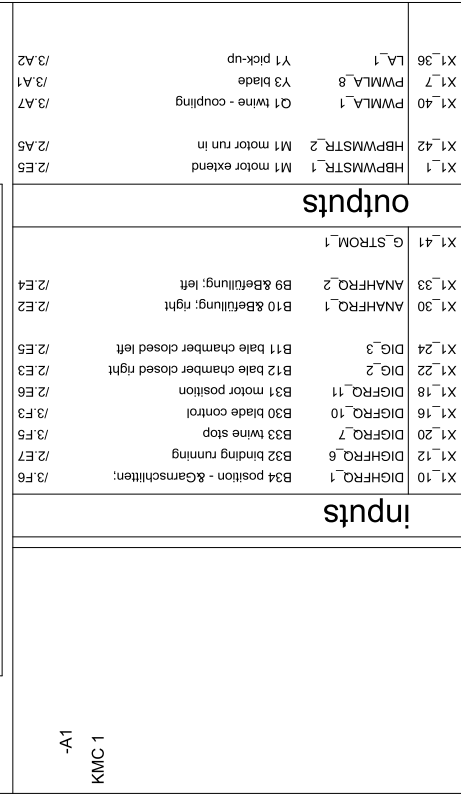
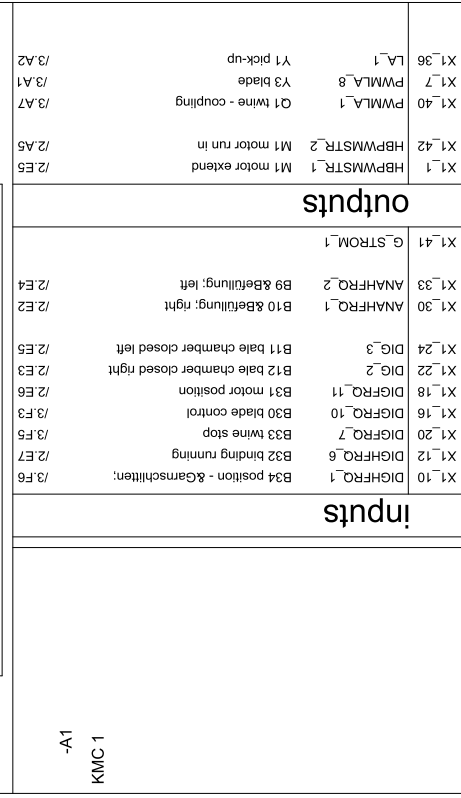
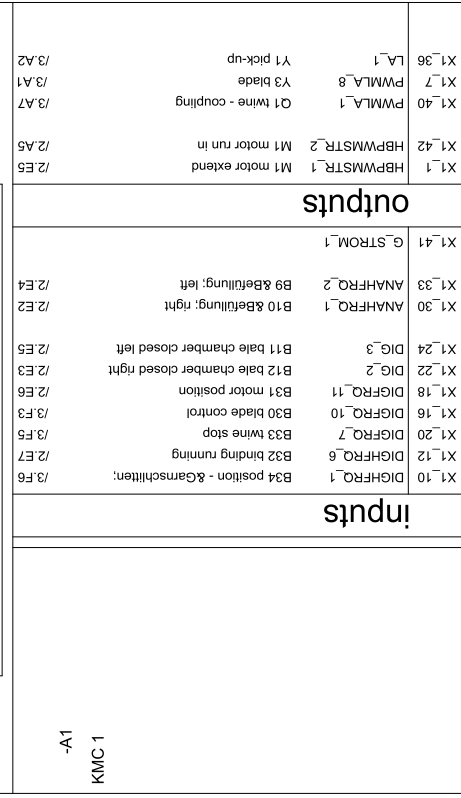
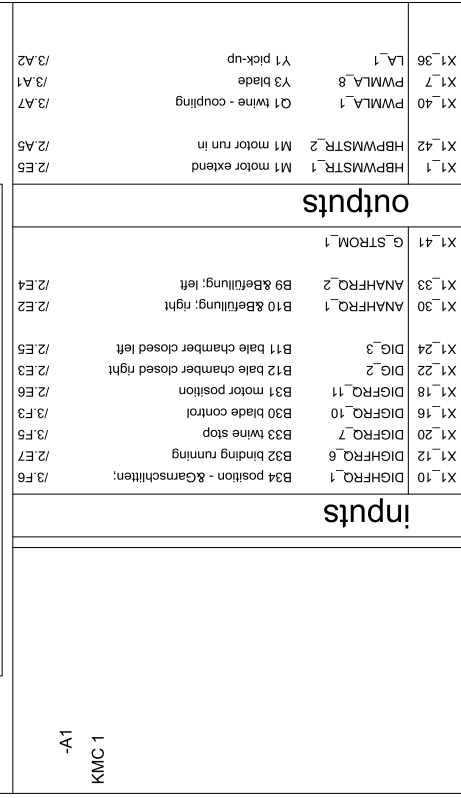
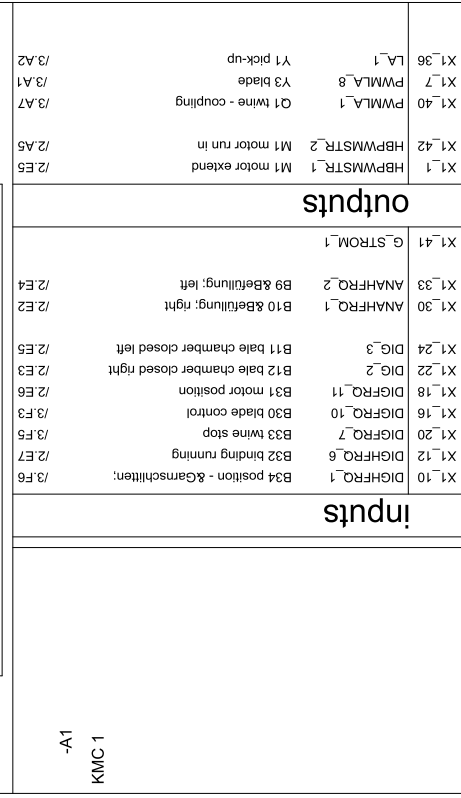
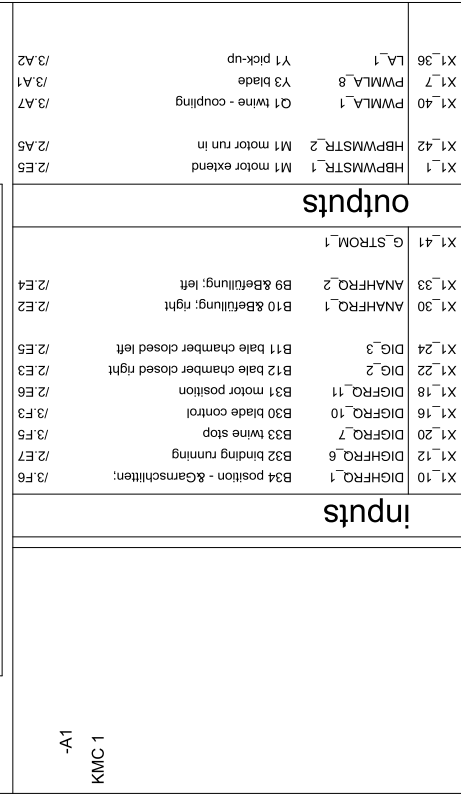
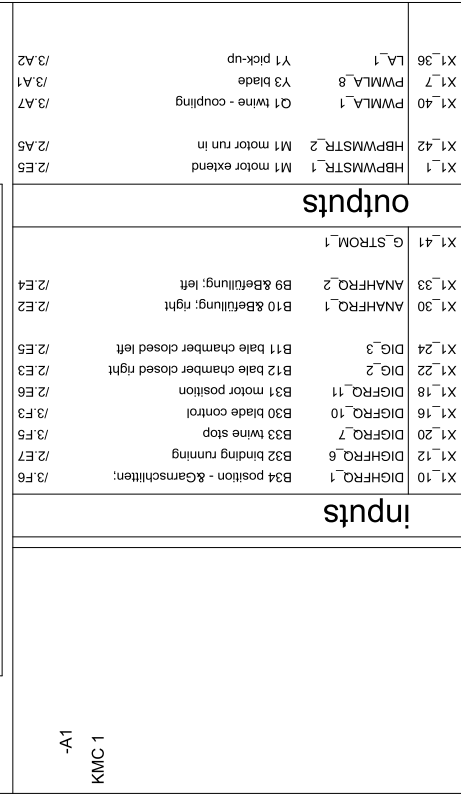
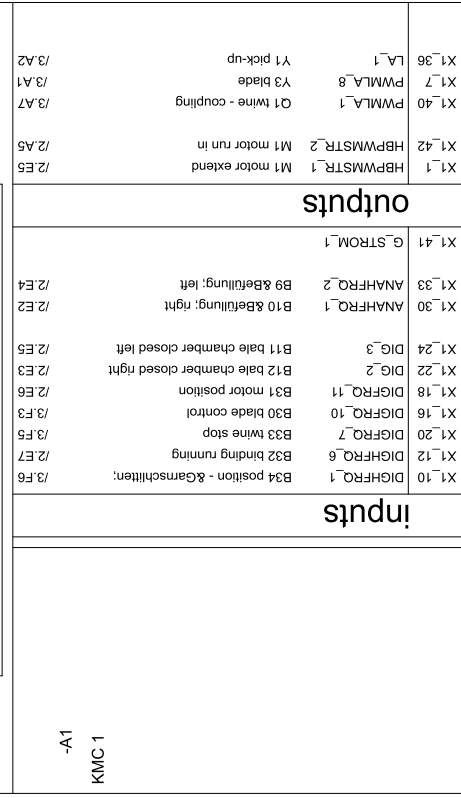
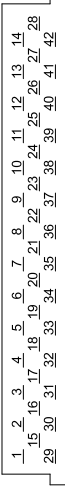


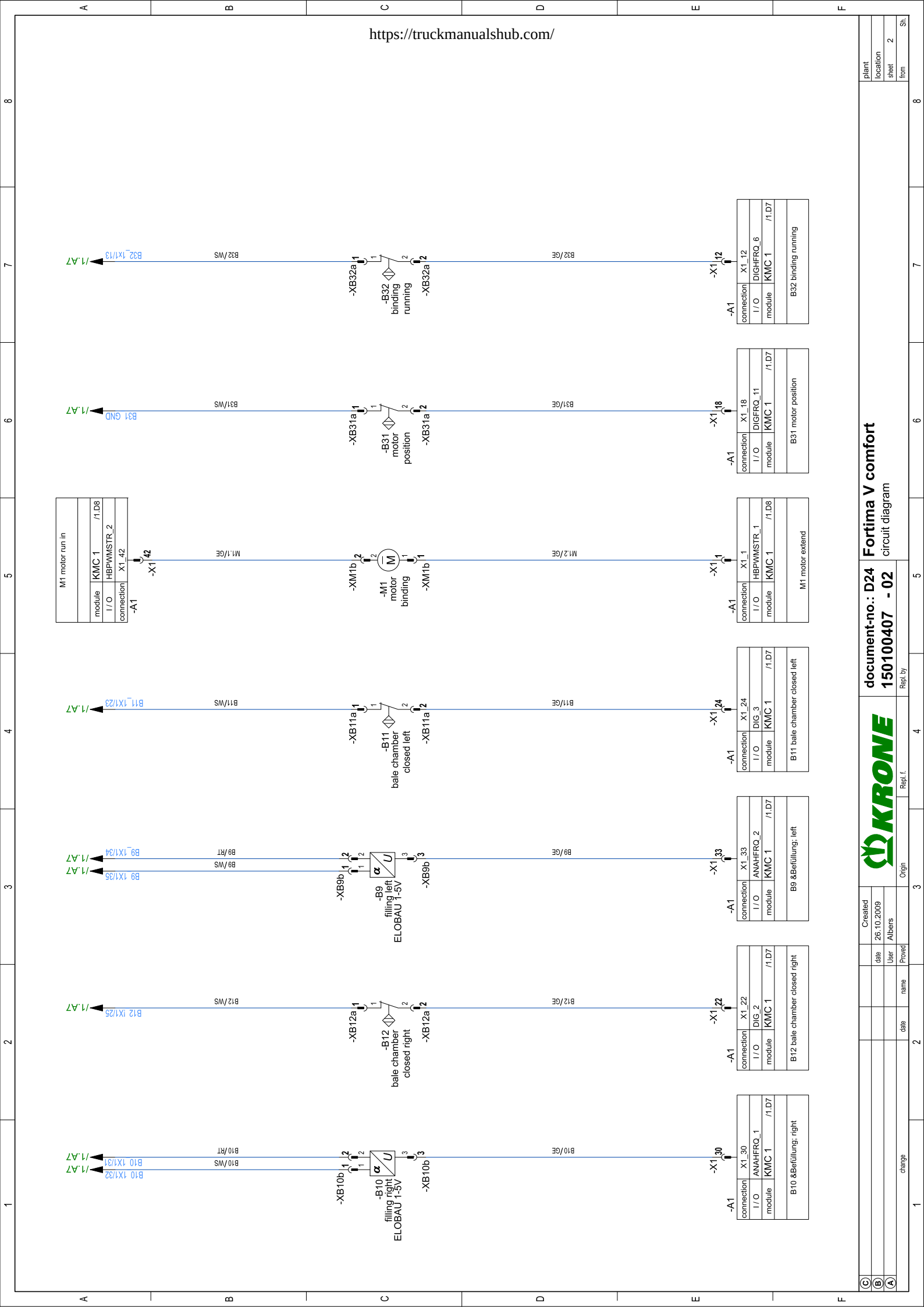
- 1: --
2: LIN
3: +12V_SW TERM
4: +12V TERM
5: CAN-Low
6: GND TERM
7: CAN-High
8: --
- ws
br
gn
ge
gr
rs
bl
rt

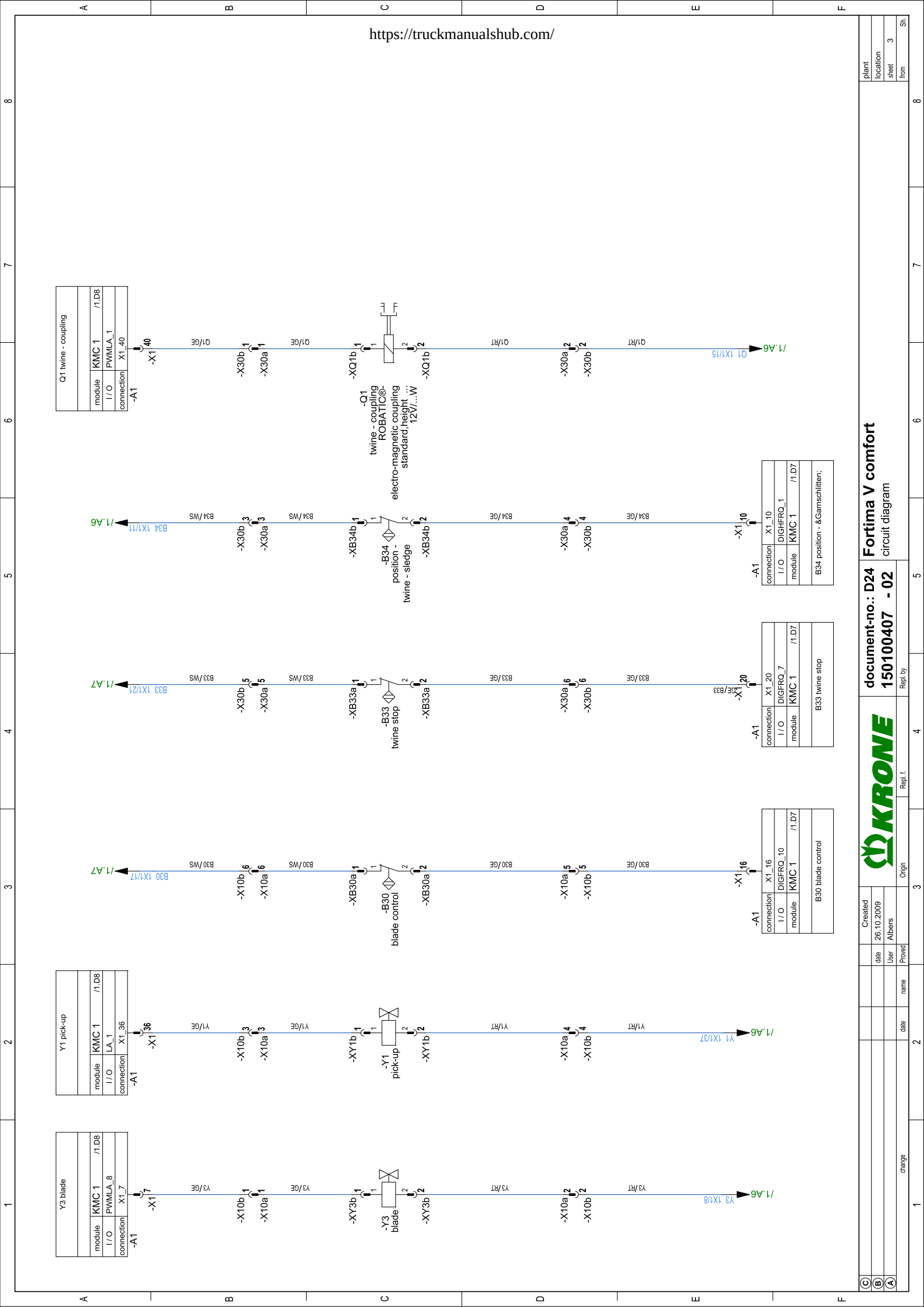


<https://truckmanualshub.com/>

X1







21 Index

A

Acoustic warnings.....	205
Activating customer counters	181
Additional equipment and spare parts.....	17
Adjust blade control shaft	243
Adjusting the additional net brake	285
Adjusting the Automatic Floor Conveyor Stop.....	293
Adjusting the baffle plate	232
Adjusting the brake activation.....	335
Adjusting the cam brake	334
Adjusting the drawbar height	72
Adjusting the idler roller	283
Adjusting the Magnetic Coupling	287
Adjusting the net brake	284
Adjusting the sensor	283
Adjusting the switching time	294
Adjusting the twine brake	281
Affixing the Adhesive Safety and Information Labels	46
After Baling	226
Air filter for pipelines	339
Alarm messages	151, 204
Appendix.....	367
Assemble spacers (Fortima V 1800 (MC))	71
Assembly and disassembly of the bale ejector	257
At the End of the Harvest Season	356
Attaching the guard cup for universal shaft	75
Attaching the safety cable	48
Attaching the Triangle Spotlights.....	81
Attachment of control unit.....	107
Audio signals	151
Auxiliary-function (AUX).....	212

B

Basic safety instructions	16
Basic Screen.....	110, 161
Before the Start of the New Season	357
Behaviour in hazardous situations and when accidents occur	26
Blade Quick-Fit Device	241
Brakes.....	333
Bringing up a Menu Level.....	118

C

Calling up the menu level	168
Central chain lubrication system.....	288
Central Position of Engine Sensor.....	310
Checking and maintaining tyres	330

Checking the brake setting	333
Checking the lighting system	216
Children in danger.....	17
Circuit Diagram	369
Cleaning the Tensioning Arm Floor Conveyor Rear	326
Commissioning	61
Compressed Air Connections for the Compressed Air Brake	90
Compressed-air reservoir	340
Connect the machine to the tractor.....	17, 83
Connecting the hydraulic lines.....	85
Connecting the Terminal with ISOBUS.....	93
Connecting the terminal without ISOBUS.....	92
Consumables	23, 60
Contact.....	46
Control block.....	343
Counters	179
Coupling heads	338
Coupling the machine safely.....	28
Cutting length.....	236
Cutting system	235

D

Danger zones.....	19
Dangers associated with certain activities Climbing up and down.....	25
Dangers associated with certain activities Work on the machine	25
Dangers associated with certain activities Working on wheels and tyres	26
Dangers associated with the operational environment	23
Description of the keys	108
Diagnostics – analogue sensors.....	142, 188
Diagnostics – digital actuators	194
Diagnostics – digital actuators	147
Diagnostics – Namur sensors.....	142, 187
Diagnostics - power supply voltages	145
Diagnostics Auxiliary Functions (AUX)	203
Diagram	367
Differing functions to KRONE ISOBUS terminal CCI	211
Direction Information.....	12
Directories and References	11
Display	158
Displays in the main window.....	112
Disposal of the machine	366



Double Twine Tying	260	ISOBUS-Terminal	155
Drawbar	316	K	
Drive chain tension for auger conveyor drive ..322, 323		Keeping safety devices functional	21
Drive chain tension for cutting system drive	324	KRONE operation terminal Beta	106
Drive chain tension for pick-up	321	L	
Drive chain tension of roller drive	323	Loosening the net brake	286
Drive chain tension of the front floor conveyor drive	319	Lubricants	348
Drive chain tension of the rear floor conveyor drive	320	Lubricating the PTO shaft	348
Drive chain tension roller drive	322	Lubrication points	349
Driving and Transport	214	M	
E		Main gearbox	317
Electrical connections	91	Main Menu 1	169
Emergency Manual Activation Electromagnetic Valves (MC Cutting System)	344	Main menu 1 Settings	119
Error Messages of KRONE Operation Terminal	365	Main menu 2 Counters	133
Example of joystick assignment for Fendt (default setting)	213	Main menu 3	138
F		Main menu 4	185
Filling Correction	174	Main menu 4 Service	140
Filling the Bale Chamber	224	Main menu 5	149
Floor conveyor chain	259	Main Menu 6	150
Floor Conveyor Tension	325	Maintenance	295
Further applicable documents	11	Maintenance - Brake System	337
G		Maintenance - lubrication	347
General malfunctions	361	Maintenance work before the beginning of the new season	358
General Messages	154, 208	Malfunctions - Causes and Remedies	360
H		Malfunctions on the central chain lubrication system	364
Hitches on the Drawbar	316	Manual actuator test	192
How to use this document	11	Manual operation	183
Hydraulic brake (Export)	87	Manual sensor test	186
Hydraulics	84, 341	Means of representation	12
I		Notes with information and recommendations	14
Identification Plate	54	Warning signs	14
Importance of the operating instructions	16	Means of Representation	
Information Required for Questions and Orders	54	Figures	12
Inserting Net Roll	275	Medium Operation Panel	96
Install the PTO shaft	88	Bale Firmness Sensor	313
Installing additional discharge plates in the tailgate	225	Displaying Baling Pressure	102
Installing the terminal into the cabin	156	Net Tying / Twine Tying	97
Intended use	15	Net Tying or Twine Tying	97
ISOBUS	198	Operating Bale Counter	100
ISOBUS Diagnostics	202	Setting Baling Pressure Indicator	302
ISOBUS operation	209	Setting Spring Rail	301
ISOBUS Short Cut Button	157	Setting the Number of Net Layers	98
		Setting the Number of Twine Wraps	99
		Starting Tying	103
		Switching Between Zero Setting of Blades Operation and Pick-up Operation	101
		Testing Sensors	105



Medium Operation Panel		Position and meaning of the safety stickers on the machine	31
Switching ON/OFF	97	Position of net motor	184
Medium Operation Panel		Position of the Sensors	305
Sensor Net Tying Mechanism	312	Possible motors (depending on how the machine is equipped)	148
Menu	129	Preparations for road travel	215
Menu 1-1 Contrast	120	Preparing the machine for repair, maintenance and adjustment work	29
Menu 1-3	121	Pre-Signalling	172
Menu 1-4 Sensitivity of Direction Display	122	PTO shaft	75
Menu 1-5 Pre-Signalling	124	Purpose of Use	15
Menu 1-6 Correction Filling	126	Q	
Menu 1-7	128	Quadruple Twine Tying	266
Menu 1-8-1 Inserting Twine Wraps	130	R	
Menu 1-9 Tying Start Delay	132	Removing the Crop Blockages in the Crop Collection Area	250
Menu 2-1 Customer counters	134	Re-Ordering the Adhesive Safety and Information Labels	46
Menu 2-2 Total bale counter	136	Reversing	255
Menu 4-2 Manual Sensor Test	141	Roller crop guide	231
Menu 4-4 Manual Actuator Test	146	S	
Menu level (short overview)	117	Safety	15
Messages	114, 166	Safety routines	27
Metric Thread Screws with Control Thread	314	Safety signs on the machine	22
Metric Thread Screws with Countersunk Head and Hexagonal Socket	315	Safety stickers on the machine	31
Metric Thread Screws with Fine Thread	315	Scope of Document	12
Mounting ISOBUS Terminal	210	Select automatic mode	111
N		Select day/night display lighting	200
Net brake	81	Select manual mode	111
Net Wrapping	274	Select type of tying	176
Note and messages	152, 206	Selecting Blade Base	111
Number of net winds	170	Selecting Pick-up	111
Number of Twine Wraps	177	Sensitivity	171
O		Sensor B9/B10 Adjusting the bale diameter (Fortima V)	189
Oil Level Check and Oil Change Intervals (Gearboxes)	318	Sensor Position Blade Shaft (Machines with Cutting Device)	311
Oil Level Check and Oil Change on Main Gearbox	317	Service life of the machine	15
Operation	221	Set Baling Pressure	233
Operational readiness	109	Setting Sensors	309
Operational safety: Technically perfect condition	18	Setting Bale Diameter	116
P		Setting Bale Firmness	115
Parking	217	Setting bale firmness with sensor B9/B10	144
Parking Brake	47	Setting Cutting Blade of Net Tying Device	299
Parking Support	49	Setting Lock Hook Stop	298
Parking the machine safely	23	Setting Scraper Rail to Upper Spiral Roller	300
Personal protective equipment	21	Setting sensor B9/B10 bale diameter:	143
Personnel qualification	16	Setting Tailgate Lock	297
Physical messages	153, 207		
Pick-up	228		
Placing in Storage	356		



Setting the Setpoint Bale Firmness	164
Setting the Target Bale Diameter	165
Setting the Twine Brake.....	280
Setting the tying twine in place	262, 268
Settings.....	279
Settings Before Starting Work	222
Shear Screw for Pick-up Drive	230
Shortening the floor conveyor chain	327
Shut-off valve for tailgate	52, 342
Sources of danger on the machine.....	24
Spare Parts.....	295
Splash guard.....	227
Starting the machine safely	29
Start-up	82
Step for working on the linkage	53
Stop Points	51
Stopping and securing the machine	27
Storage of the Replacements Blades	249
Structural changes to the machine	17
Supporting lifted machine and machine parts securely	27
Switch off cutters mechanically	239, 246
Switch to different terminal	201
Switching blades off hydraulically (zero setting of blades)	240
Switching the terminal on / off when the machine is connected.....	160
Switching the terminal on / off when the machine is not connected.....	159

T

Target group of this document.....	11
Technical data.....	55
Technician.....	197
Tensioning the Drive Chains.....	319
Term.....	12
Tightening torques	314
Total Bale Counter	182
Touchscreen	158
Traffic safety	22
Travelling speed.....	223
Tying Start Delay	178
Tying unit	280
Tyres	329

U

Uncoupling the machine safely.....	28
Using the safety chain	94

V

Virtual Terminal (VT).....	199
----------------------------	-----

W

Wheel chocks.....	50
Workstations and passengers	17
Wrapping and Depositing Bales	226

Z

Zero position of the cutter	245
Zero Setting of Blades	239



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