RAUCH

Complementary instructions

Please read carefully before using the machine!

Keep for future use

This operator's and assembly manual is an integral part of the machine. Suppliers of new and second-hand machines are required to document in writing that the operator's and assembly manual was delivered with the machine and handed over to the customer.

AXENT 90.1 ISOBUS

Version ≥ 6.17.00

5903527-e-en-0226

Original instructions

Dear customer,

By purchasing the machine control unit AXENT 90.1 ISOBUS for the AXENT 90.1 fertilizer spreader, you have shown confidence in our product. Thank you very much! We want to justify this confidence. You have purchased a powerful and reliable machine control unit.

However, in case unexpected problems arise, our customer service department is always there for you.

Please read this supplementary manual as well as the operator's manual for the machine carefully before using the machine, and follow the advice given.

This manual may also describe equipment that is not included in your machine control unit.

Technical improvements

We continuously strive to improve our products. For this reason, we reserve the right to make any improvements and changes to our machine that we consider necessary without notice. We do not accept any obligation to make such improvements or changes on machines that have already been sold.

We will be pleased to answer any other questions that you might have.

Yours sincerely

RAUCH Landmaschinenfabrik GmbH

Table of contents

1 User instructions

1.1 About this operator’s manual

This operator's manual is an **integral part** of the machine control unit.

The operator’s manual contains important instructions for **safe**, **proper**, and economic **use** and **maintenance** of the machine control unit. Compliance with its stipulations helps to **avoid risks**, reduce repair costs and downtime, and to increase the reliability and service life of the machine controlled with it.

The operator's manual must be kept in an easily accessible location close to where the control unit is operated (such as in the tractor).

The operator's manual does not replace your **own responsibility** as operator and operational staff of the machine control unit.

1.2 Meaning of warnings

The warnings in the operator’s manual are classified according to the severity of the risk and the probability of its occurrence.

The warning symbols draw attention to the residual risks to which users of the machine are exposed. The warnings used are structured as follows:

Symbol + **signal word**
Explanation

Level of danger of warnings
The level of danger is indicated in the signal word. The levels of danger are classified as follows:

⚠ DANGER!

Type and source of danger

This warning warns of a danger posing an immediate threat to the health and life of people.

Ignoring these warnings will result in severe injury or death.

- ▶ Always observe the measures described to prevent this danger.

⚠ WARNING!

Type and source of danger

This warning warns of a potentially dangerous situation for personal health.

Ignoring these warnings leads to severe injury.

- ▶ Always observe the measures described to prevent this danger.

⚠CAUTION!

Type and source of danger

This warning warns of a potentially dangerous situation for personal health.

Ignoring these warnings leads to injury.

▶ Always observe the measures described to prevent this danger.

NOTICE!

Type and source of danger

This warning warns of material and environmental damage.

Ignoring these warnings will result in damage to the machine and to the environment.

▶ Always observe the measures described to prevent this danger.

This is an instruction:
General instructions contain tips for the operation and information that is particularly useful, but no warnings about hazards.

1.3 Notes on text descriptions

1.3.1 Instructions and procedures

Steps that must be performed by operating staff are displayed as follows

▶ Instructions step 1

▶ Instructions step 2

1.3.2 Lists

Lists without a specific sequence are shown as lists with bullet points:

- Property A
- Property B

1.3.3 References

References to other sections in the document are shown with paragraph number, header text and/or page number:

- **Example:** Please also note *2 Layout and function*

References to other documents are shown as information or instructions without the exact chapter or page number:

- **Example:** Follow the instructions in the operator's manual of the universal drive shaft manufacturer.

1.3.4 Menu hierarchy, keys and navigation

Menus are the entries listed in the **main menu** window.

The menus list **submenus and/or menu items** where settings can be made (selection lists, text or number entries, starting a function).

The various menus and buttons of the machine control unit are illustrated **in bold letters**.

The hierarchy and the path to the requested menu item are marked with an > (arrow) between menu and/or menu item(s):

- System / Test > System / Test > Test/diagnosis means that you can reach the menu item Voltage via the menu item System / Test and the menu item Test/diagnosis.
    - The arrow > corresponds to the operation of the **scroll wheel** and/or the button at the screen (touchscreen).

2 Layout and function

2.1 Overview of supported machines

- Spreading depending on forward speed
- Weigh cells
- Electrical drop point setting
- VariSpread VS pro
- EMC mass flow control

This chapter is limited to the description of the functionality of the electronic machine controller; it does not specify any particular ISOBUS terminal.

- The instructions for the operation of the ISOBUS terminal can be found in the relevant operator's manual.

2.2 Display

The display shows the current status information as well as the selection and input options for the electronic machine control unit.

The most important information concerning the operation of the machine is displayed in the **working screen**.

2.2.1 Description of the working screen

The exact representation of the working screen depends on the actual settings selected and on the machine type.
See *Chapter 2.1 - Overview of supported machines - Page 10* and *Chapter 2.2.2 - Display fields - Page 11*

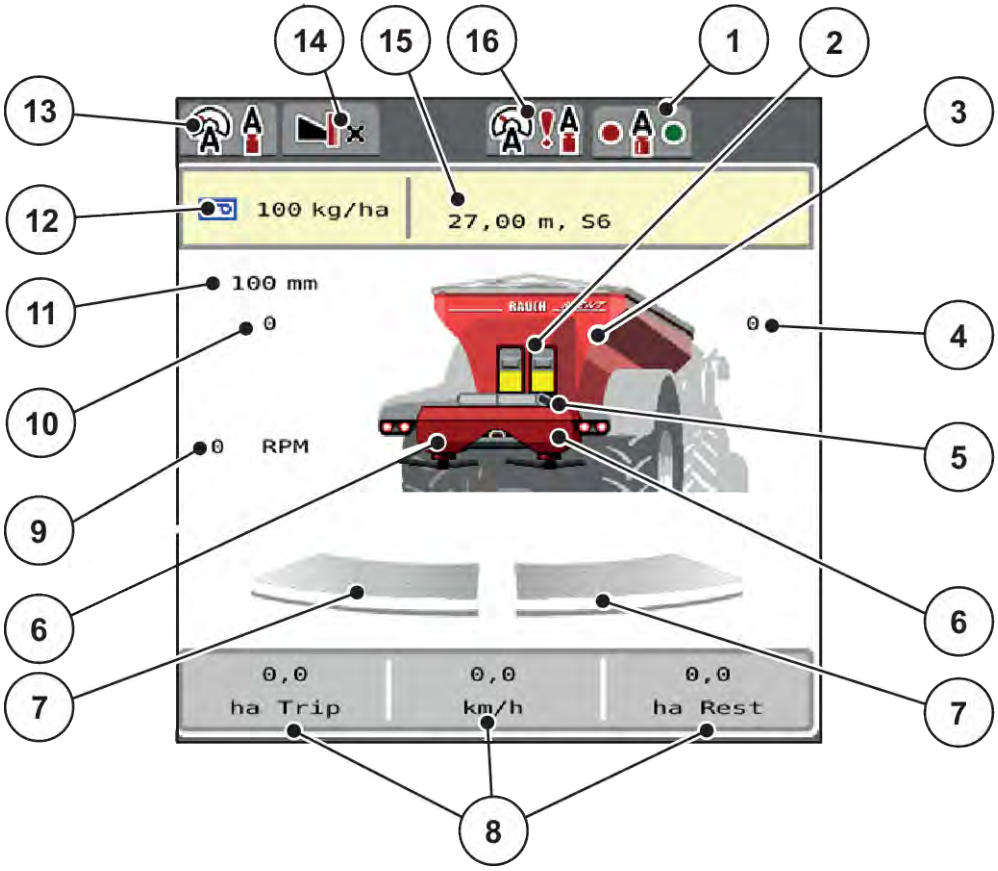


Fig. 1: Machine control unit display

[1] EMC status
[2] Pre-metering slide display
[3] Large area spreader filling level display
[4] Metering slide position, right
[5] Conveyor belt display
[6] Left/right spreading unit filling level display
[7] Metering slide aperture status, right/left
[8] Freely definable display fields
[9] PTO speed
[10] Metering slide position, left
[11] Current opening position of the pre-metering slide
[12] Fertilizer information display (fertilizer name, working width and spreading disc type)
Button: Adjustment in the fertilizer chart
[13] Selected operating mode
[14] Boundary spreading mode
[15] Current application rate from the fertilizer settings or the task controller
Button: direct entry of the application rate
[16] Overloading operating mode display

2.2.2 Display fields

The three display fields in the working screen can be individually adjusted and assigned the following values as desired:

- Forward speed
- Flow factor (FF)
- ha trip
- kg trip
- m trip
- kg left
- m left
- ha left
- Idle time (Time until the next idling measurement)
- Torque for the spreading disc drive
- Belt speed in mm/s

Select display

▶ Press the corresponding display field in the touch screen.

The available options are displayed in a list.

▶ Select the new value to be assigned to the display field.

▶ Press the OK button.

The working screen is displayed.

The respective display field displays the new value.

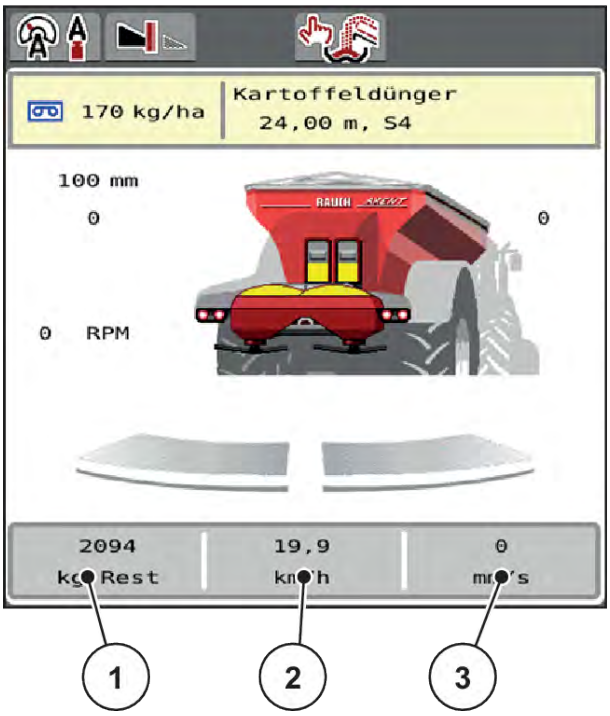


Fig. 2: Display fields

[1] Display field 1
[2] Display field 2
[3] Display field 3

2.2.3 Display of the metering slide status

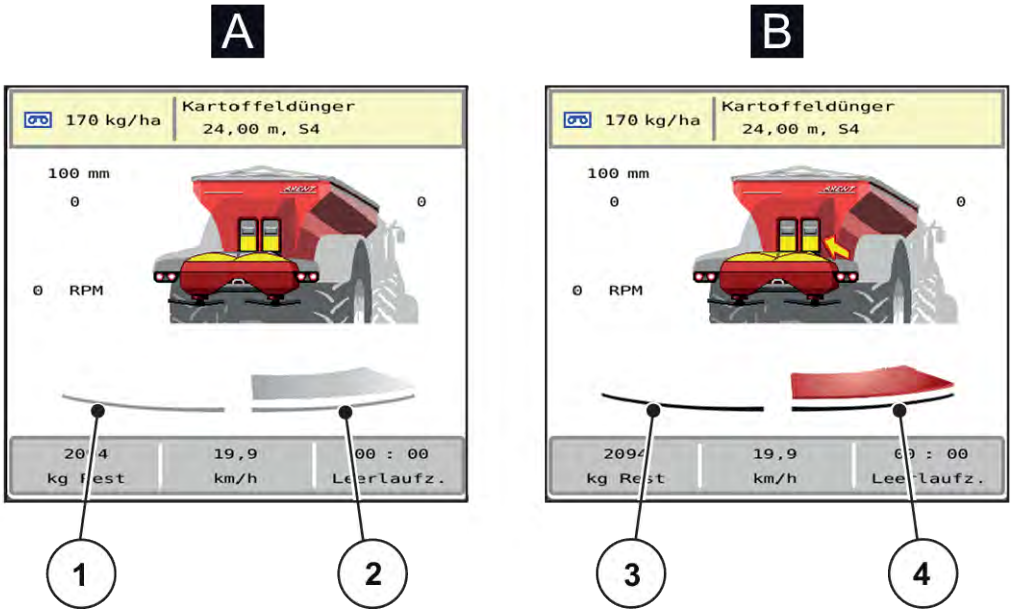


Fig. 3: Display of the metering slide status

[A] Spreading operation inactive
[1] Section deactivated
[2] Section activated

[B] Machine in spreading operation
[3] Section deactivated
[4] Section activated

■ ***Deactivating a complete spreading side***

In the border area a complete spreading side can be immediately deactivated. This is particularly helpful for a quick spreading operation in field corners.

▶ Press the section reduction softkey for longer than 500 ms.

2.2.4 Display of sections

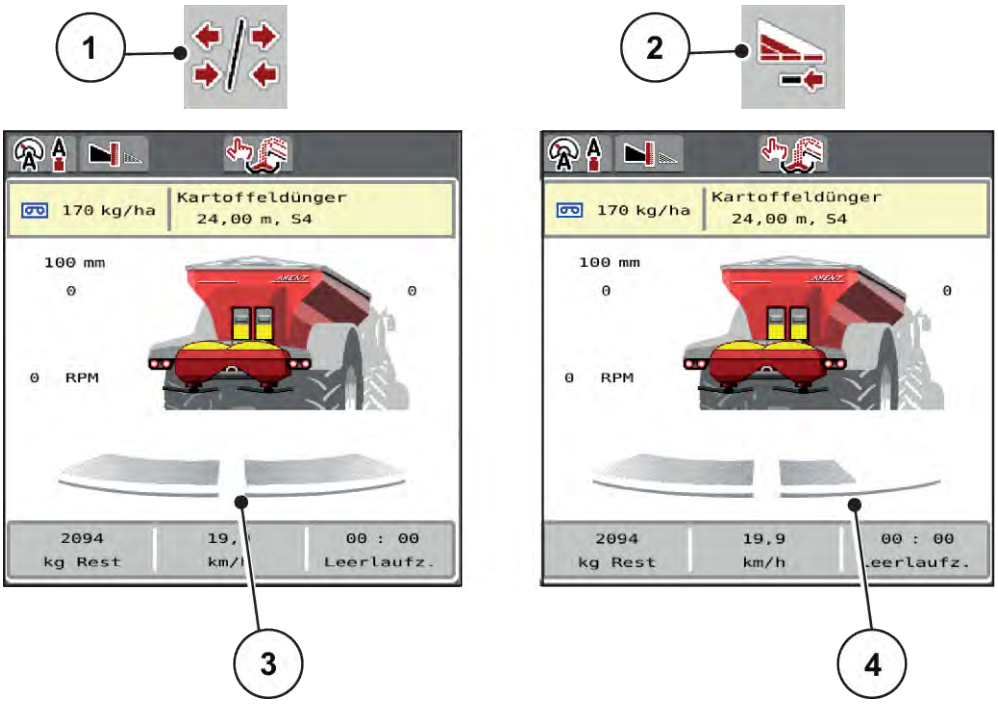


Fig. 4: Display of the section statuses

[1] Sections/border spreading toggle key
[2] Reduce right section button
[3] Activated sections on entire working width
[4] Right section is reduced by several partial sections

Further display and setting options are explained in chapter *5.2.1 Working with sections*.

We recommend restarting the terminal in the following cases:

- Working width changed.
- Different fertilizer chart entry called up.

After restarting the terminal, the section display changes to match the new settings.

2.2.5 Display of the EMC status

Status of the EMC control:
- Red dot: EMC control inactive
- Green dot: EMC control active

When side/limited border spreading, no EMC control is active on the side/limited border spreading side, which is why the dot remains red on the corresponding side.

2.3 Library of icons used

The AXENT 90.1 ISOBUS machine control unit displays icons for the individual menus and functions on the screen.

2.3.1 Navigation

Icon	Meaning
	Go to the left; previous page
	Go to the right; next page
	Back to the previous menu
	Back to main menu
	Switch between working screen and menu window
	Cancellation, closing the dialog window

2.3.2 Menus

Icon	Meaning
	Switch from a menu window directly to the main menu

Icon	Meaning
	Switch between working screen and menu window
	SpreadLight operating lights
	Fertilizer settings
	Machine settings
	Fast emptying
	System/Test
	Information
	Weighing/Trip counter

2.3.3 Working screen icons

Icon	Meaning
	Start spreading and control of application rate
	The spreading operation has started; stop the application rate regulation
	Reset the quantity adjustment to the pre-set application rate
	Switch between working screen and menu window
	Switch between boundary spreading and sections on the left or on both spreading sides
	Sections on the left side, border spreading on the right spreading side

Icon	Meaning
	Selection of the surplus/shortage quantity on the left, the right or both spreading sides (%)
	Quantity adjustment + (plus)
	Quantity adjustment - (minus)
	Quantity adjustment, left + (plus)
	Quantity adjustment, left - (minus)
	Quantity adjustment, right + (plus)
	Quantity adjustment, right - (minus)
	Manual quantity adjustment + (plus)
	Manual quantity adjustment - (minus)
	OptiPoint Pro is activated OptiPoint Pro not activated: the icon is not shown
	OptiPoint pro is active in headland mode
	Left spreading side inactive
	Left spreading side active

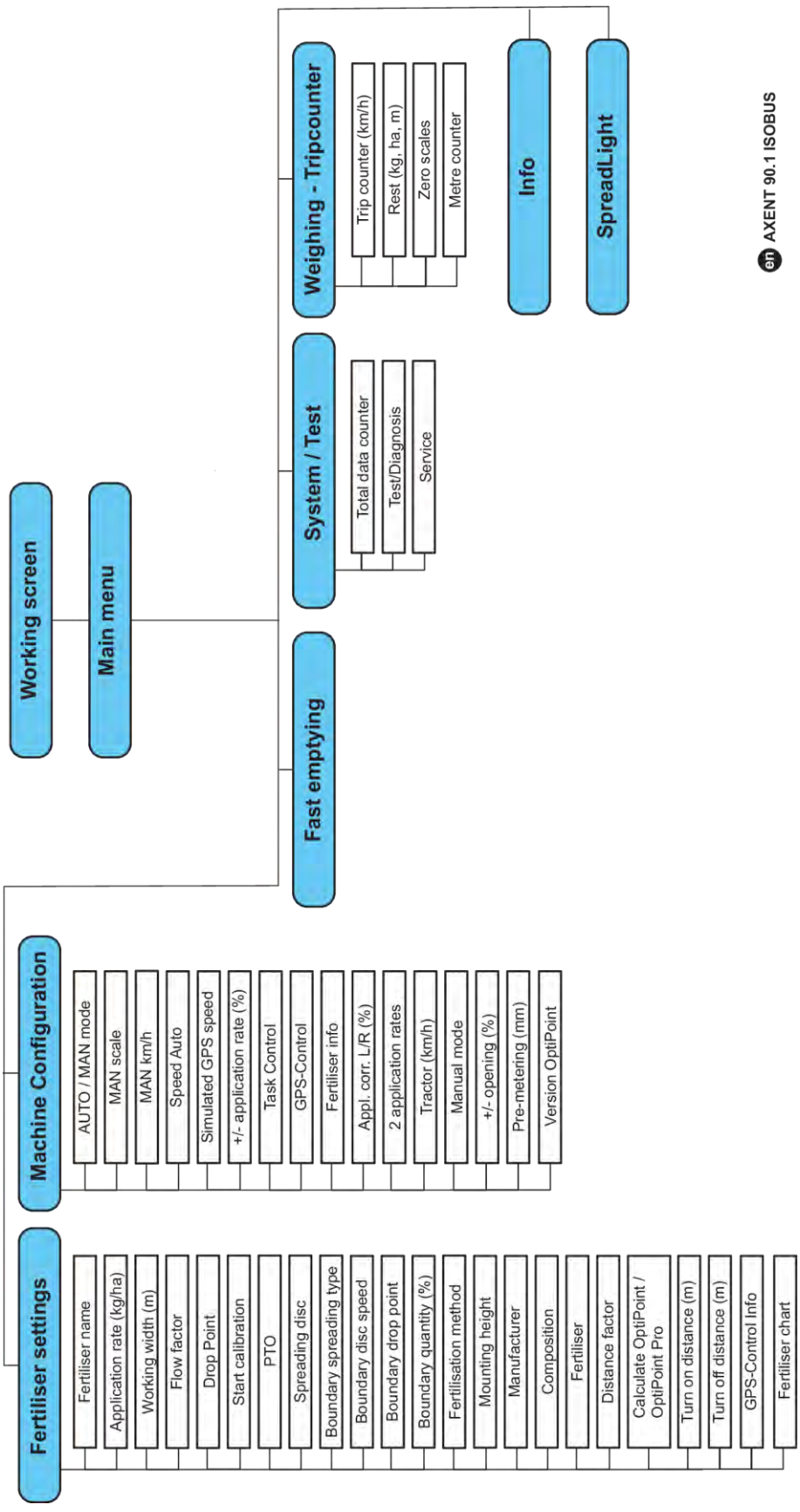
Icon	Meaning
	Right spreading side inactive
	Right spreading side active
	Reduce left section (minus) **In boundary spreading mode:** Pressing and holding (> 500 ms) immediately deactivates an entire spreading side.
	Increase left section (plus)
	Reduce section, right (minus) **In boundary spreading mode:** Pressing and holding (> 500 ms) immediately deactivates an entire spreading side.
	Increase right section (plus)

2.3.4 Other icons

Icon	Meaning
	Start idle measurement, in the main menu
	Limited border spreading mode, in the working screen
	Full border spreading mode, in the working screen
	Limited border spreading mode, in the main menu
	Full border spreading mode, in the main menu
	Manual overloading is active
	Automatic overloading is active

Icon	Meaning
	Operating mode AUTO km/h + AUTO kg
	Working mode AUTO km/h
	Operating mode MAN km/h
	Operating mode MAN scale
	Start manual overloading
	Manual overloading is active; stop manual overloading
	Decrease (minus) conveyor belt speed; Terminals with 2x6 function keys only
	Increase (plus) conveyor belt speed; Terminals with 2x6 function keys only
	EMC control deactivated
	Status EMC
	Loss of the GPS signal (GPS J1939)
	The minimum mass flow is undercut
	The maximum mass flow is exceeded.

2.4 Structural menu overview



3 Attachment and installation

3.1 Tractor requirements

Before installing the machine control unit, ensure that the tractor satisfies the following requirements:

- A minimum voltage of **11 V** must **always** be guaranteed, even when several consumers are connected concurrently (e.g., air conditioning system, lights)
- The PTO speed can be set to 1000 rpm and must be maintained.

On tractors without load-switchable transmission, the forward speed must be selected by using the correct gear ratio in such a way that it corresponds to a PTO speed of **1,000 rpm**.

- 9-pin socket (ISO 11783) located at the rear of the tractor, for connecting the machine control unit to the ISOBUS
- 9-pin terminal plug (ISO 11783) for connecting an ISOBUS terminal to the ISOBUS

The power supply of the machine control unit is implemented via the 9-pin ISOBUS socket at the rear of the tractor.

If the tractor is not equipped with a 9-pin socket at the rear, a tractor assembly set including a 9-pin socket for the tractor (ISO 11783) and a forward speed sensor may be purchased additionally as special equipment.

- The tractor has to provide the speed signal to the ISOBUS.

Check that the dealer has the necessary plugs and sockets available.

- Due to the numerous configurations of tractor/machine/terminal, please contact the dealer when selecting the correct connection.

3.2 Connections, sockets

3.2.1 Power supply

The power supply of the machine control unit is implemented via the 9-pin socket at the rear of the tractor.

3.2.2 Connecting the machine control unit

Depending on the equipment, there are different methods for connecting the machine control unit to the mineral fertilizer spreader. Further information can be found in the operator’s manual of the machine.

3.2.3 Overview of actuators and sensors

The following overviews do not represent the exact position of actuators and sensors on the machine. This sub-chapter only serves for information on the assemblies and sensors controlled by the electronic system.

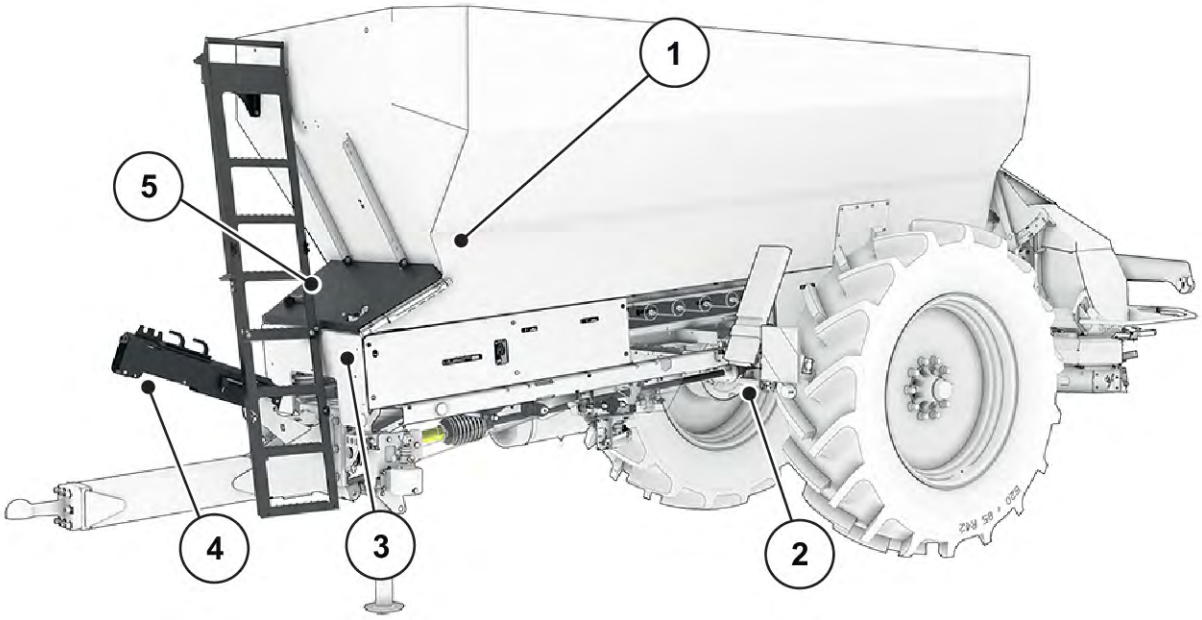


Fig. 5: Overview of actuators and sensors at the AXENT large area spreader

[1] Level sensor
[2] Angular sensor of the axle (left) (option)
Rear weigh cells, left/right
Steering cylinder (optional)
Steering axle A/B stop valve (optional)
Forward speed sensor (right)
[3] Front weigh cells, left/right
[4] Gyroscope (option)
[5] Hydraulic block with valves

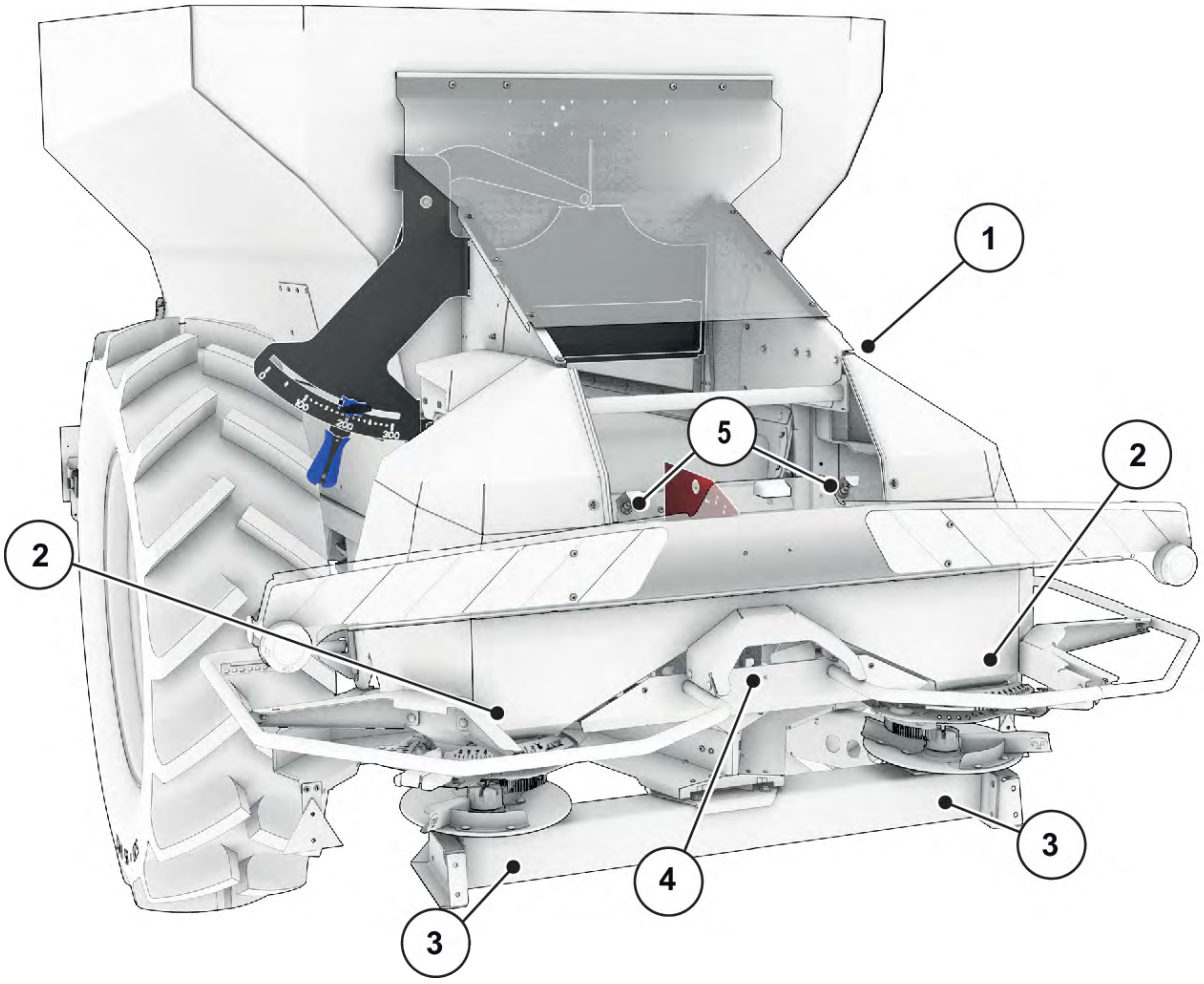


Fig. 6: Overview of actuators and sensors at the AXENT large area spreader and fertilizer spreading unit

[1] Belt drive
Belt speed sensor
[2] Metering slide actuator, left/right
Agitator, left/right
[3] FAG sensor in the gearboxes left/right
[4] Drop point actuator, left/right (option)
[5] Level sensors

4 Operation

⚠CAUTION!

Risk of injury due to discharged fertilizer

In the case of a fault, it is possible that the metering slide unexpectedly opens during road transport to the spreading location. There is a risk of slipping and personal injury due to ejected fertilizer.

▶ **Before leaving for the spreading location**, always switch off the electronic machine control unit.

4.1 Switching on the machine control unit

Requirements:

- The machine control unit is correctly connected to the machine and the tractor.
  - For an example, see *3.2.2 Connecting the machine control unit*.
- The minimum voltage of **11 V** is guaranteed.

▶ Start the machine control unit.

▶ The **Start screen** of the machine control unit appears.

▶ Note any warning message and acknowledge it with the Enter key.

▶ Subsequently, the machine control unit displays the **activation menu** for a few seconds.

The working screen then appears.

4.2 Navigation within the menus

Refer to chapter *1.3.4 Menu hierarchy, keys and navigation* for important notes regarding the display and navigation between menus.
The techniques for accessing menus and menu entries **by touching the touch screen or pressing the function keys**by touching the touch screen or pressing the function keys are described below.

- Refer to the operator's manual of the terminal that is used.

■ ***Accessing the main menu***

▶ Press the **Working screen/main menu** function key. See *2.3.2 Menus*.

The main menu is displayed.

■ ***Accessing the sub-menu via the touch screen***

▶ Press the button of the desired sub-menu.

Windows appear with prompts for various actions.
- Text input
- Value input
- Settings made in further sub-menus

Not all parameters are displayed simultaneously on one screen. Use the **left/right arrow** keys to skip to the next or previous menu windows (tabs).

■ ***Exiting menus***

▶ Confirm settings by pressing the **Return** key.

Back to the **preceding menu** .

▶ Press the **working screen/main menu** key.

Back to the **working screen**.

▶ Press **ESC**.

The previous settings are retained.

Back to the **preceding menu** .

4.3 Functional description: Status indicator

The control unit provides information on the current filling levels and sensor conditions of the large area spreader and the attached spreading unit.

4.3.1 Spreading material supply

The AXENT conveyor belt starts automatically. The spreading material is discharged through the outlet into the spreading unit.

The spreader material flowing in fills the intermediate container in the spreading unit. The overload runs continuously depending on the spread quantity. The belt speed adapts automatically.

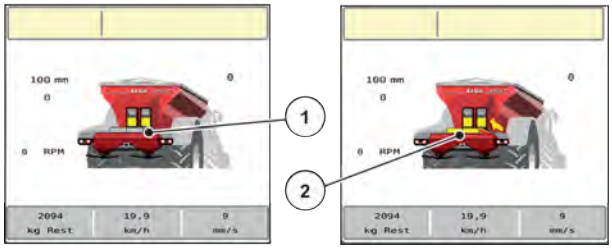


Fig. 7: Conveyor belt status display

[1] Standing conveyor belt [2] Running conveyor belt

4.3.2 Empty hopper

The filling level sensor does not have a function if the kg level sensor is active.

- See *4.6 Machine settings*

At the time of empty notification, the remaining spreading material in the hopper is usually sufficient for a few overloading operations.

Despite the alarm message, the AXENT ISOBUS machine control unit attempts full overloading of the residual quantity.

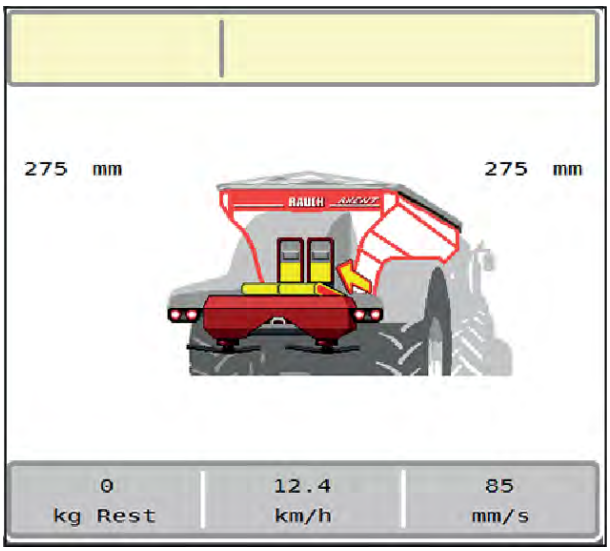


Fig. 8: AXENT hopper filling level indicator

4.4 Main menu

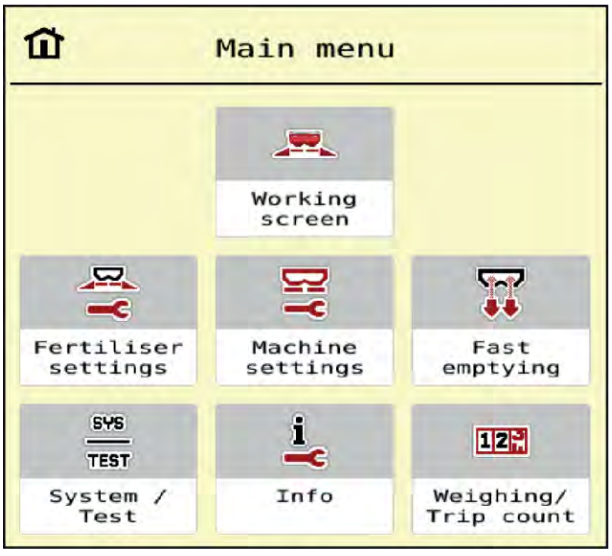


Fig. 9: Main menu with sub-menus

Sub-menu	Meaning	Description
SpreadLight	Activation/deactivation of operating lights	*4.11 Operating lights (SpreadLight)*
Working screen Working screen	Switches to the working screen	
Fertiliser settings Fertiliser settings	Fertilizer and spreading operation settings	*4.5 Fertilizer settings*
Machine settings Machine settings	Tractor and machine settings	*4.6 Machine settings*
Fast emptying Fast emptying	Direct access to menu for fast emptying of the machine	*4.7 Fast emptying*
System/Test System / Test	Settings and diagnosis of the machine control unit	*4.8 System/Test*
Info Info	Machine configuration display	*4.9 Info*
Weighing / Trip count Weighing/Trip count.	Values regarding spreading work performed and functions for weighing operation	*4.10 Weighing/Trip counter*

In addition to the sub-menus, you can select function keys in the main menu.

- See *2.3.4 Other icons*.

4.5 Fertilizer settings

In this menu, the fertilizer and spreading settings can be changed.

▶ Call up the Main menu > Fertiliser settings menu.

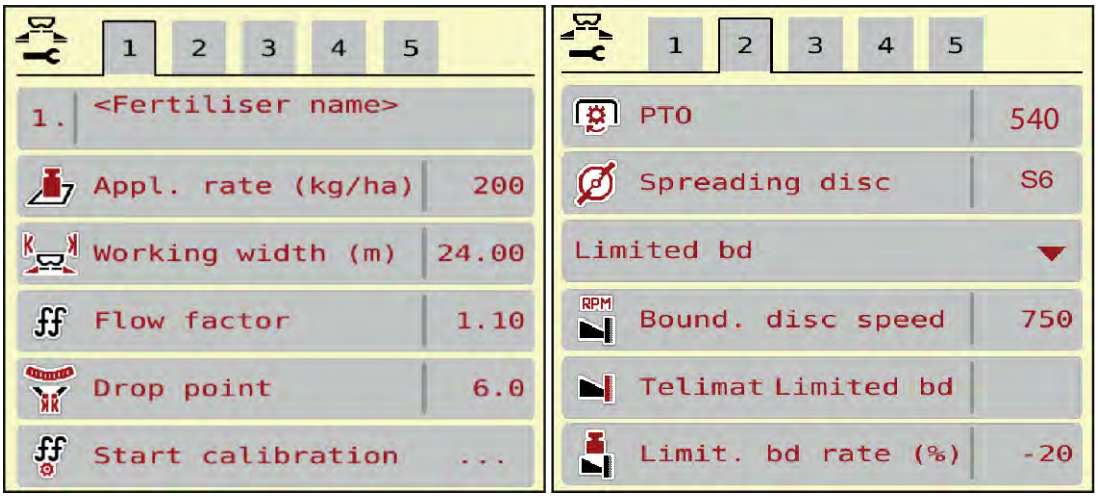


Fig. 10: Fertiliser settings menu, mechanical drive, tab 1 and 2

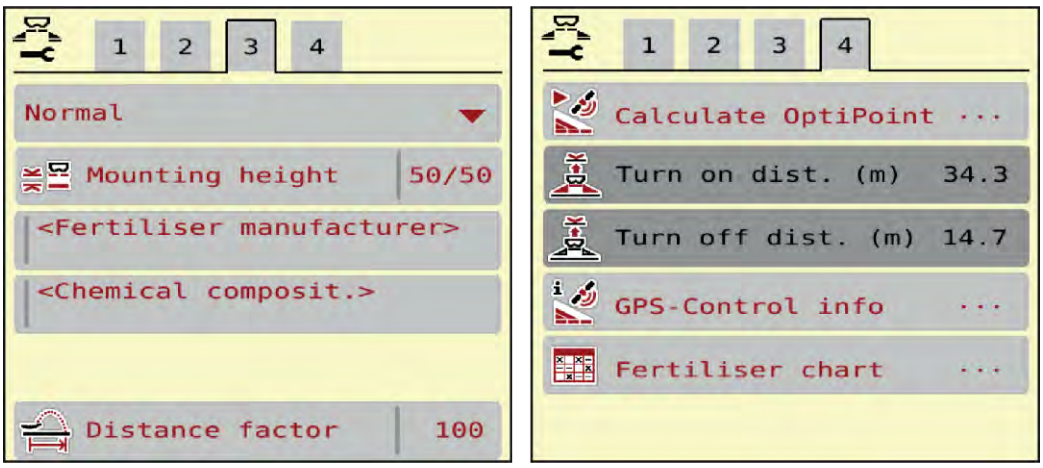


Fig. 11: Fertiliser settings menu, tab 3 and 4

Sub-menu	Meaning	Description
Fertiliser name Fertiliser name	Fertilizer selected from the fertilizer chart	*4.5.12 Fertilizer charts*
Application rate Appl. rate (kg/ha)	Inputting the set application rate in kg/ha	*4.5.1 Application rate*
Working width Working width (m)	Determination of the working width to be spread	*4.5.2 Setting the working width*
Flow factor Flow factor	Input of flow factor of the fertilizer used	*4.5.3 Flow factor*
Drop point Drop point	Input of the drop point	Refer to the operator's manual for the machine. *4.5.4 Drop point*

Sub-menu	Meaning	Description
Start calibration Start calibration	Accessing the sub-menu for executing the calibration **Not available in EMC mode**	*4.5.5 Calibration test*
PTO PTO	Influences the EMC mass flow control Factory setting: • 750 rpm	
Spreading disc Spreading disc	Setting the type of spreading disc mounted on the AXIS-PowerPack The setting influences the EMC mass flow control.	Selection list: • S4 • S6 • S8 • S12
Boundary spreading type Bound. sprd.type	Selection list: • Limited bd • Full bord.	Selection with arrow keys, confirmation with the Enter key This is adjusted by means of the speed of the tractor PTO shaft.
Boundary spreading speed Bound. disc speed	Pre-setting the rpm in the border spreading mode	To be entered in a separate input window
Boundary quantity Limit. bd rate (%)	Pre-setting the application rate reduction in border spreading mode	To be entered in a separate input window
TELIMAT	Saving the TELIMAT settings for boundary spreading	Only for AXIS-M machines with TELIMAT
Fertilisation method Fertilisation method	Selection list: • Normal • Late sprd.	Selection with the **arrow keys** Confirmation with the **Enter key**
Mounting height Mounting height	No function	
Manufacturer Manufacturer	Fertilizer manufacturer input	
Composition Composition	Percentage of the chemical composition	
Fertiliser class Fertilizer class	Selection list	Selection with arrow keys; Confirmation with the Enter key
Distance factor Distance factor	Input of the distance factor from the fertilizer chart. Required for OptiPoint calculation	

Sub-menu	Meaning	Description
Calculate OptiPoint Calculate OptiPoint	Input of the GPS control parameters	*4.5.9 Calculate OptiPoint*
Turn on distance Turn on dist. (m)	Input of turn on distance	
Turn off distance Turn off dist. (m)	Input of turn off distance	
GPS Control Info GPS-Control info	Display of information of the GPS Control parameters	*4.5.11 GPS Control info*
Fertiliser chart Fertiliser chart	Management of fertilizer charts	*4.5.12 Fertilizer charts*

4.5.1 Application rate

In this menu, the target value for the desired application rate can be set.

Enter the application rate:

- ▶ Call up the Fertiliser settings > Appl. rate (kg/ha) menu.

  The application rate **currently applied** *is displayed.*
- ▶ Enter the new value in the input field.
- ▶ Press **OK**.

  The new value is saved in the machine control unit.

The application rate can also be input or adjusted directly at the control unit.

- ▶ Press the Appl. rate (kg/ha) [1] button on the touch screen.
  - ▷ The number input window is displayed.
- ▶ Enter the new value in the input field.

The new value is saved in the machine control unit.

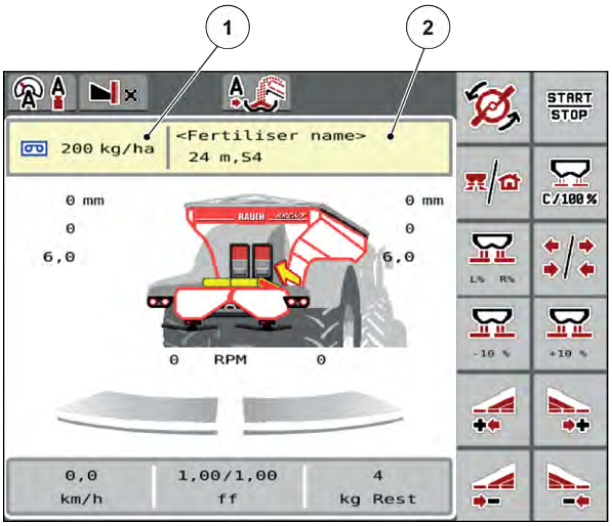


Fig. 12: Entering the application rate on the touch screen

[1] Button Application rate [2] Button Fertiliser chart

4.5.2 Setting the working width

The working width can be set in this menu.

▶ Call up the Fertiliser settings > Working width (m) menu.

The working width **currently applied** *is displayed.*

▶ Enter the new value in the input field.

▶ Press **OK**.

The new value is saved in the machine control unit.

The working width cannot be adjusted whilst spreading is in progress.

4.5.3 Flow factor

The flow factor lies within the range of **0.2** to **1.9**.

With identical basic settings (km/h, working width, kg/ha), the following applies:

- If the flow factor is **increased**, the metering quantity is **reduced**
- If the flow factor is **reduced**, the metering quantity is **increased**

An error message is displayed if the flow factor is outside the preset range. See chapter *6 Alarm messages and possible causes*.

When spreading bio-fertilizers or rice, reduce the minimum factor to 0.2. This avoids continual display of this error message.

If the flow factor was obtained from earlier calibrations or from the fertilizer chart, enter it manually in this selection box.

Via the Start calibration menu, the flow factor can be determined and entered using the control unit. Refer to Chapter *4.5.5 Calibration test*

The flow factor on the AXIS PowerPack with EMC is determined by the EMC mass flow controller. It may however also be entered manually.

The flow factor calculation depends on the operating mode used. For further information about the flow factor, refer to chapter *4.6.1 AUTO/MAN mode*.

Entering the flow factor:

- ▶ Call up the Fertiliser settings > Flow factor menu.

  The **currently set** *flow factor is displayed.*

- ▶ Enter the value obtained from the fertilizer chart into the input field.

If the fertilizer is not listed in the fertilizer chart, enter a flow factor of **1.00**. In operating mode AUTO km/h or MAN km/h, we recommend performance of a **calibration** in order to be able to accurately determine the flow factor for this fertilizer.

- ▶ Press OK.

The new value is saved in the machine control unit.

For the AXIS-PowerPack EMC (AUTO km/h + AUTO kg operating mode), we recommend that the flow factor is displayed on the working screen. This allows the regulation of the flow factor to be monitored during spreading. See chapter *2.2.2 Display fields*.

4.5.4 Drop point

With the AXENT, the drop point is set using exclusively the electrical drop point adjustment.

- ▶ Call up the Fertiliser settings > Drop point menu.
- ▶ Determine the position for the drop point using the fertilizer chart.
- ▶ Enter the determined value in the input field.
- ▶ Press OK.

The Fertiliser settings window is displayed with the new drop point.

⚠CAUTION!

Risk of injury due to automatic adjustment of the drop point

When the **Start/Stop** function key is pressed, the drop point is automatically moved to the preset value by an electrical actuator (Speedservo). This may cause injury.

- ▶ Before pressing the **Start/Stop** key, ensure that nobody is present in the hazard zone of the machine.
- ▶ Acknowledge the “Approach drop point” alarm message by pressing Start/Stop.

4.5.5 Calibration test

⚠WARNING!

Risk of injury during calibration test

Rotating machine parts and discharged fertilizer could cause injury.

- ▶ Before starting the calibration, ensure that all requirements have been met.
- ▶ Observe the calibration chapter in the operator's manual for the machine.

The Start calibration menu is blocked for all machines in the **operating mode** AUTO km/h + AUTO kg. This menu item is inactive.

In this menu the flow factor is determined on the basis of a calibration and is saved in the machine control unit.

Run the calibration test:

- before spreading for the first time
- If the fertilizer quality has changed significantly (moisture, high dust content, granulate damage)
- If a new fertilizer type is used

The calibration must be performed on the stand with the PTO running.

- Remove both spreading discs.
- The drop point moves to the calibration position.

Entering the working speed:

- ▶ Call up the Fertiliser settings > Start calibration menu.
- ▶ Enter the average working speed.

  This value is required for calculation of the slide position during calibration.
- ▶ Press the Continue button.

  The new value is saved in the machine control unit.

  The second calibration page is displayed.

Select the section

- ▶ Set the spreader side on which the calibration is to be performed.

  Press the function key of the left spreading side.

  Press the function key of the right spreading side.

  The icon indicating the selected spreader side has a red background.

▶ Press **Start/Stop**.

The metering slide of the previously selected section opens and the calibration is started.

The calibration period can be interrupted at any time by pressing the ESC key. The metering slide is closed and the display shows the Fertiliser settings menu.

The calibration time is not relevant to the accuracy of the results. However, a **minimum of 20 kg** should be calibrated.

▶ Press **Start/Stop** again.

The calibration is completed.

The metering slide closes.

The third calibration page is displayed.

■ ***Recalculating the flow factor***

⚠ WARNING!

Risk of injury due to rotating machine parts

Any contact with rotating machine parts (drive shaft, hubs) may lead to bruises, abrasions, and crushing injuries. Body parts or objects may be caught or drawn in.

▶ Switch off the tractor engine.
▶ Switch off the hydraulics system and secure it against unauthorized activation.

- ▶ Weigh the collected weight (taking into account the empty weight of the collection tray).
- ▶ Enter the weight under the **Calibrated quantity** menu entry.
- ▶ Press **OK**.

  The new value is saved in the machine control unit.

  The **Flow factor calculation** *menu is displayed.*

The flow factor must be between 0.4 and 1.9.

- ▶ Set the flow factor.

  In order to apply the newly calculated flow factor, press the Confirm flow factor button.

  To confirm the previously saved flow factor, press the **OK** key.

The flow factor is saved.

The "Approach drop point" alarm message is displayed.

⚠CAUTION!

Risk of injury due to automatic adjustment of the drop point

When the **Start/Stop** function key is pressed, the drop point is automatically moved to the preset value by an electrical actuator (Speedservo). This may cause injury.

- ▶ Before pressing the **Start/Stop** key, ensure that nobody is present in the hazard zone of the machine.
- ▶ Acknowledge the "Approach drop point" alarm message by pressing Start/Stop.

4.5.6 Disc type

For optimal idle measurement, check the correct input in the Fertiliser settings menu.

- The entries in the Spreading disc and Normal disc speed or PTO menu items must correspond to the actual settings of the machine.

The mounted type of spreading disc has a default factory setting. If other spreading discs are mounted on the machine, enter the correct type.

- ▶ Call up the Fertiliser settings > Spreading disc menu.
- ▶ Activate the type of spreading disc in the selection list.

The Fertiliser settings window is displayed with the new spreading disc type.

4.5.7 Rotation speed

- ■ ***PTO***

For an optimum empty run measurement, check the correct input in the Fertiliser settings menu.

- The entries in the Spreading disc and PTO menu items must correspond to the actual settings of the machine.

The specified PTO speed is preset in the control unit to 750 rpm as a standard factory setting. If a different PTO speed is set, change the saved value in the control unit.

▶ Call up the Fertiliser settings > PTO menu.

▶ Enter the speed in rpm.

The Fertiliser settings window is displayed with the new PTO speed.

Refer to chapter *5.2.2 Spreading with the automatic operating mode (AUTO km/h + AUTO kg)*.

4.5.8 Boundary spreading quantity

The quantity reduction (in percent) can be specified in this menu. This setting is used for the activation of the border spreading function.

We recommend reducing the quantity on the border spreading side by 20 %.

Entering the border spreading application rate:

▶ Call up the Fertiliser settings > Limit. bd rate (%) menu.

▶ Enter the value in the input field and confirm.

The Fertiliser settings window is displayed with the new border spreading application rate.

4.5.9 Calculate OptiPoint

The parameters for calculating the optimum turn-on and turn-off distances in the headlands can be entered in the Calculate OptiPoint menu. For an accurate calculation, it is very important to enter the aerodynamic factor for the fertilizer used.

The calculation should be performed only after all the data for the desired spreading process have been transferred in the Fertiliser settings menu.

See the fertilizer chart for the machine for the aerodynamic factor for the fertilizer being used.

- ▶ Enter the required value in the menu Fertiliser settings > Distance factor.
- ▶ Call up the Fertiliser settings > Calculate OptiPoint menu.

  The first page of the Calculate OptiPoint menu is displayed.

The indicated forward speed refers to the forward speed in the area of the switching positions! See *5.2.7 GPS control*.

- ▶ Press OK.

  The second page of the menu is displayed.
- ▶ Enter the average forward speed in the range of switching positions.
- ▶ Press the Continue button.

  Skip to the GPS information field.

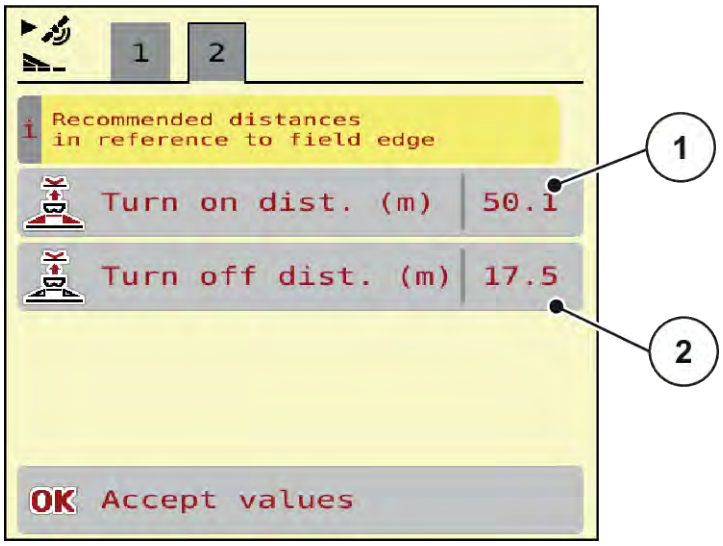


Fig. 13: Calculate OptiPoint, page 2

Number	Meaning	Description
[1]	Turn on dist - Turn on dist. (m) Distance from the field border (in meters) at which the metering slides open.	*Turn on distance (m)*
[2]	Turn off dist - Turn off dist. (m) Distance from the field border (in meters) at which the metering slides close.	*Turn off distance (m)*

The parameter values can be adjusted manually on this page. See *5.2.7 GPS control*.

Changing the values

- ▶ Open the desired list entry.
- ▶ Enter the new values.
- ▶ Press OK.
- ▶ Press the Accept values - Accept values button.

The OptiPoint is calculated.

The machine control unit switches to the GPS-Control info window.

4.5.10 Headland mode

Display of the OptiPoint Pro function:

- In the main menu: The “OPTI” function key appears in the main menu when the **OptiPoint Pro** function is activated in the machine settings.
- In the operating screen: The function key only appears in the operating screen when the side/ limited border spreading function is activated.

Activating the OptiPoint Pro function:

- ▶ Press the “OPTI” function key to activate the headland mode.

  A message appears on the corresponding side (left or right) of the operating screen to indicate that the headland mode is active.

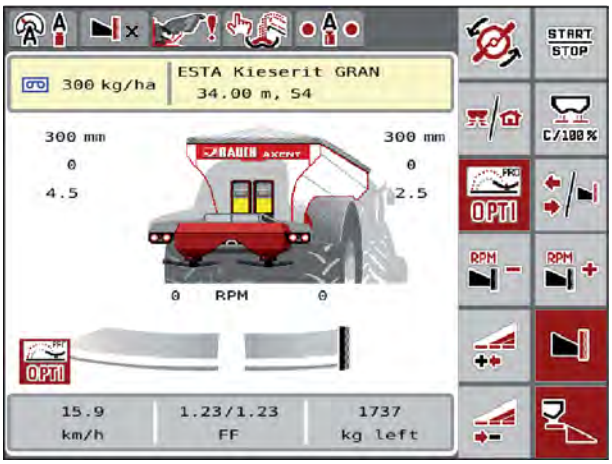


Fig. 14: OptiPoint representation on the working screen

Activation of OptiPoint in the main menu

- ▶ If the function keys for the spreading disc speed are not displayed, they can also be activated in the main menu [3].

OptiPoint activated on the working screen

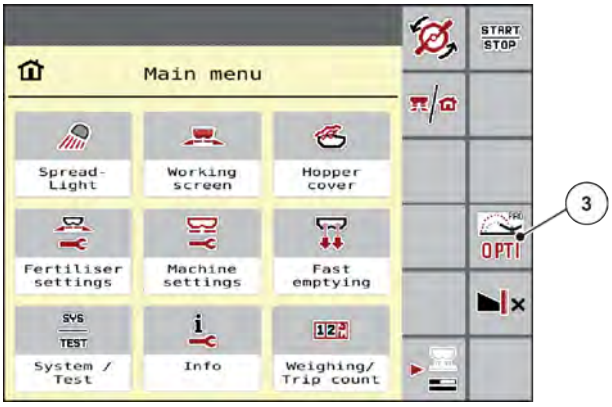


Fig. 15: OptiPoint activated in the main menu

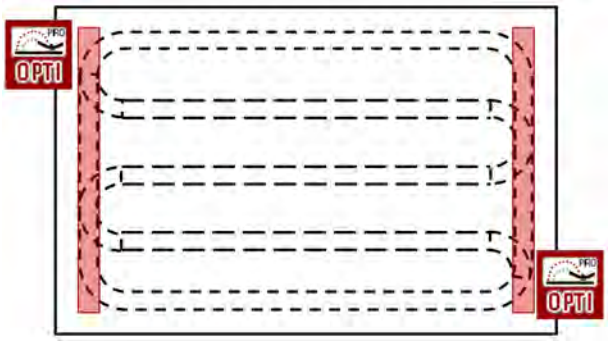
When the “OPTI” function key is activated, the rate and drop point increase on one side. The changed values are displayed on the operating screen. The extent to which the quantity and the drop point are increased depends on the fertilizer settings. In particular, with high working widths and drop points, there is also the possibility that activating the headland mode will cause no or only very slight changes in the fertilizer quantity and the drop point.

⚠CAUTION!

Spreading errors possible

The “OPTI” function button for the headland mode must only be activated in the tracks on the headland, otherwise spreading errors may occur due to the changed fertilizer quantity and drop points.

The “OPTI” function button must only be activated in the red-marked areas, the headlands.



Deactivating headland mode:

▶ Press the “OPTI” function key again.

The headland mode is deactivated.

In addition, the headland mode is automatically deactivated in the following cases:

- Stopping the spreading process by pressing the START/STOP function key
- Pressing the ‘Switching sections/limited border spreading’ function key
- Pressing the ‘Limited border spreading function active’ function key

■ ***OptiPoint pro +***

The OptiPoint pro+ function is a further development of the OptiPoint pro and now permits improved documentation and coverage in the terminal when in the headland.

Activating the OptiPoint Pro + function:

- ▶ Press the “OPTI” function key to activate the headland mode. Or it can be activated in the main menu, see *Fig. 15 OptiPoint activated in the main menu*.

  A message appears on the corresponding side (left or right) of the operating screen to indicate that the headland mode is active.

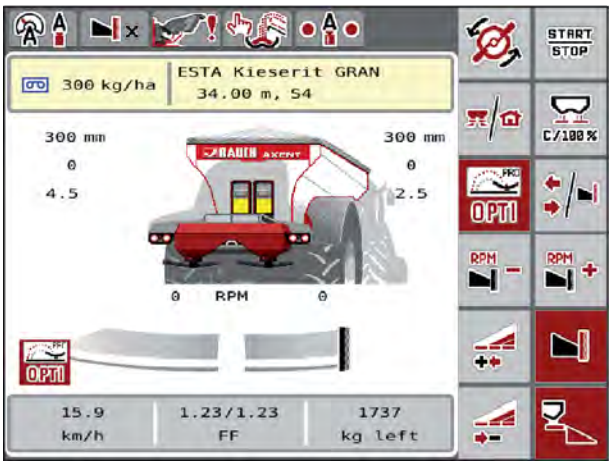


Fig. 16: OptiPoint representation on the working screen

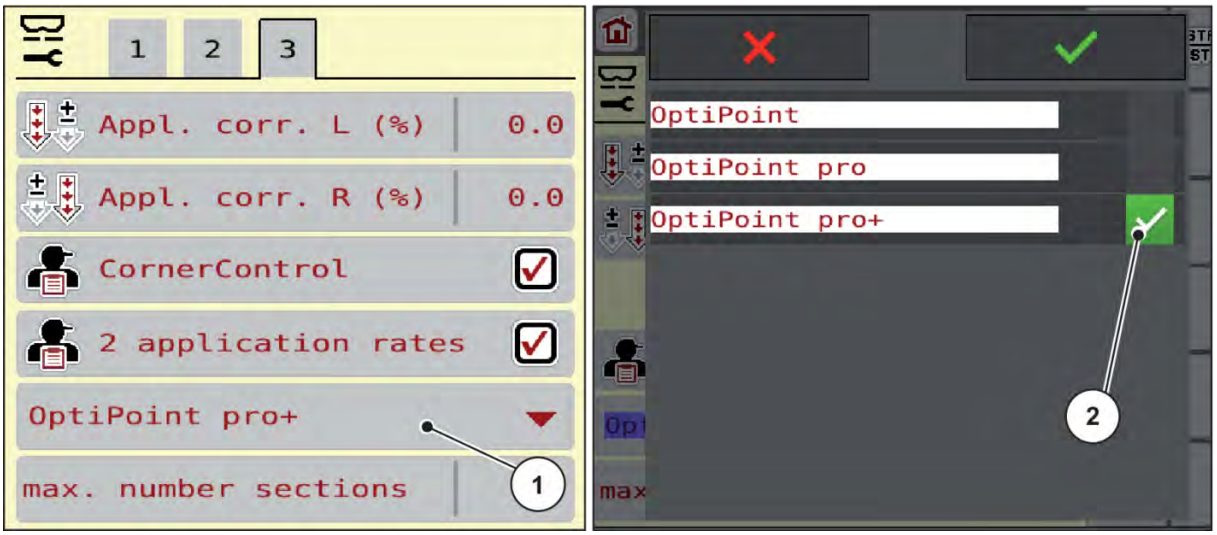


Fig. 17: Selection of the OptiPoint pro mode

To use **OptiPoint pro+**, Distance/Length must be selected on page 3 of the Machine options. For the Section Control setting Distance/Time is **not** available. In addition it must be selected on page 3 [1] of the Machine settings and the check [2] set.

For OptiPoint pro+, the delay times and distances are sent to the terminal. These together with the additional width can be viewed in the GPS Control Info screen.

NOT all terminals are compatible with this feature. OptiPoint pro+ is compatible only with terminals that support SC-Typ Distance/Length and also support delay times, so that the working width can be changed on one side during active operation. Information on compatibility can be found in the **Compatibility list**.

■ ***Corner Control***

The Feature CornerControl has been developed in order to achieve better spreading at the corners. For edge spreading / border spreading, the spreading range of the spreader is reduced on the edge spreading / border spreading side by reducing the speed of the spreading disc. This is now depicted on the terminal by showing an asymmetrical boom which reflects the real asymmetrical spreading range.

Currently CornerControl can be activated only in combination with OptiPoint pro+. This is done in the Machine settings on page 3.

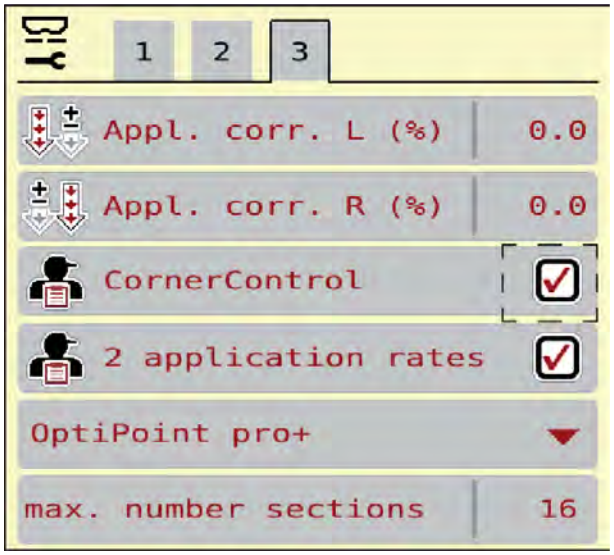


Fig. 18: CornerControl activated

By the offset boom sections it can clearly be seen how far backwards into the corner must be traveled to best achieve spreading there. If field boundaries are available in the terminal, the greatest advantage of CornerControl is evident. The offset boom permits an automatic offsetting of switching on at the boundary of the field whilst maintaining optimum coverage. The boundary spreading side must still be switched on and off manually.

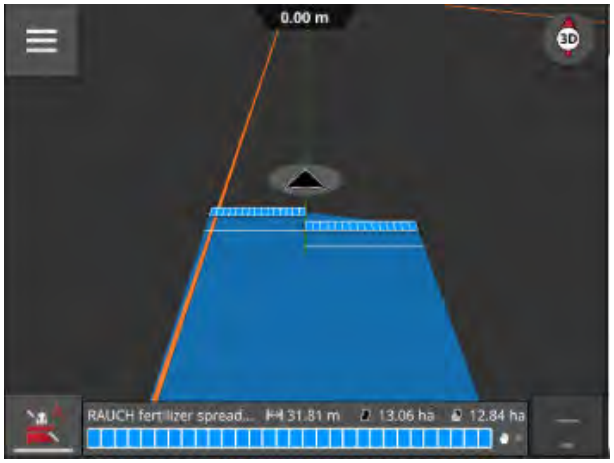


Fig. 19: CornerControl

4.5.11 GPS Control info

The GPS-Control info menu provides information about the setting values that were entered in the Calculate OptiPoint menu.

Depending on the terminal used, the display will show 2 distances (CCI, Müller Elektronik) or 1 distance and 2 time values (John Deere, etc.).

- With most ISOBUS terminals, the values displayed here are applied automatically to the corresponding settings menu of the GPS terminal.
- With some terminals, however, a manual entry is required.

This menu is for information purposes only.

- Refer to the operator's manual of the GPS terminal.

▶ Call up the Fertiliser settings > GPS-Control info menu.

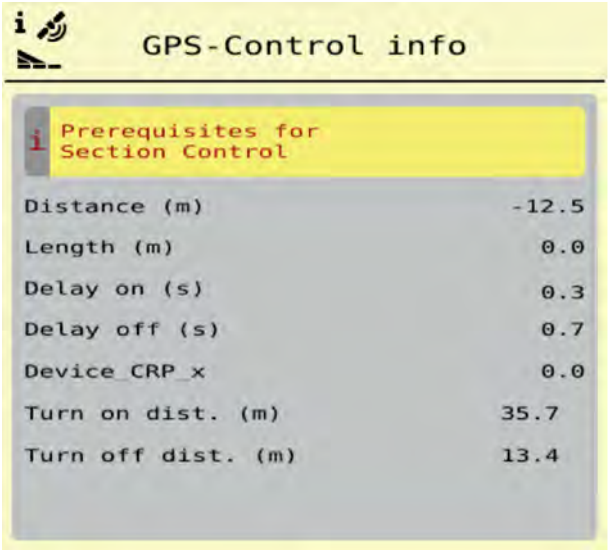


Fig. 20: GPS Control info - GPS-Control info menu

4.5.12 Fertilizer charts

The fertilizer charts are created and managed in this menu.

Selecting a fertilizer chart affects the machine, fertilizer settings and the machine control unit. The set application rate is overwritten by the stored value from the fertilizer chart.

The fertilizer charts can be loaded to the ISOBUS terminal and managed there.

- Management of fertilizer charts can be done via the connection of the WiFi module to the ECU.

■ ***Creating a new fertilizer chart***

Up to 30 fertilizer charts can be created in the electronic machine control unit.

[1] Indicates a fertilizer chart filled with values
[2] Indicates an active fertilizer chart
[3] Fertilizer chart name field
[4] Empty fertilizer chart
[5] Chart number

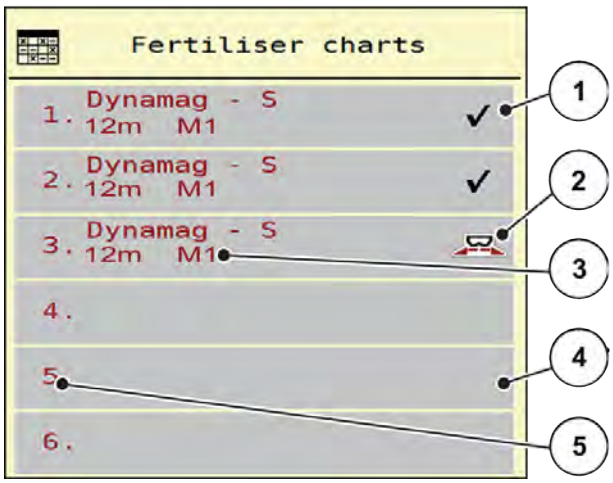


Fig. 21: Fertiliser charts - Fertiliser charts menu

- ▶ Call up the Fertiliser settings > Fertiliser charts menu.
- ▶ Select an empty fertilizer chart.

  The name field consists of the fertilizer name, the working width and the spreading disc type.

  The display shows the selection window.
- ▶ Press the option Open and back to fertiliser settings.

  The Fertiliser settings menu is displayed and the selected element is loaded into the fertilizer settings as the active fertilizer chart.
- ▶ Call up the Fertiliser name menu item.
- ▶ Enter a name for the fertilizer chart.

We recommend naming the fertilizer chart after the fertilizer. This allows the fertilizer chart for a fertilizer to be more easily recognized and accessed.

- ▶ Edit the parameters of the fertilizer chart. See *4.5 Fertilizer settings*.

■ ***Selecting a fertilizer chart***

- ▶ Access the menu Fertiliser settings > Open and back to fertiliser settings.
- ▶ Select the desired fertilizer chart.

  The display shows the selection window.
- ▶ Select the option Open and back to spreading mat. settings.

The Fertiliser settings menu is displayed and the selected element is loaded into the fertilizer settings as the active fertilizer chart.

When selecting an existing fertilizer chart, all values in the Fertiliser settings menu will be overwritten with the stored values obtained from the selected fertilizer chart, including the drop point and the normal disc speed.

- The machine control unit will move the drop point to the value stored in the fertilizer chart.

■ ***Copying an existing fertilizer chart***

▶ Select the desired fertilizer chart.

The display shows the selection window.

▶ Select the option Copy element.

A copy of the fertilizer chart is now in the first free position on the list.

■ ***Deleting an existing fertilizer chart***

▶ Select the desired fertilizer chart.

The display shows the selection window.

The active fertilizer chart cannot be deleted.

▶ Select the option Delete element.

The fertilizer chart is deleted from the list.

Managing the selected fertilizer chart via the working screen

The fertilizer charts can be managed directly on the working screen.

▶ Press the fertilizer chart button [2] on the touch screen.

The active fertilizer chart is displayed.

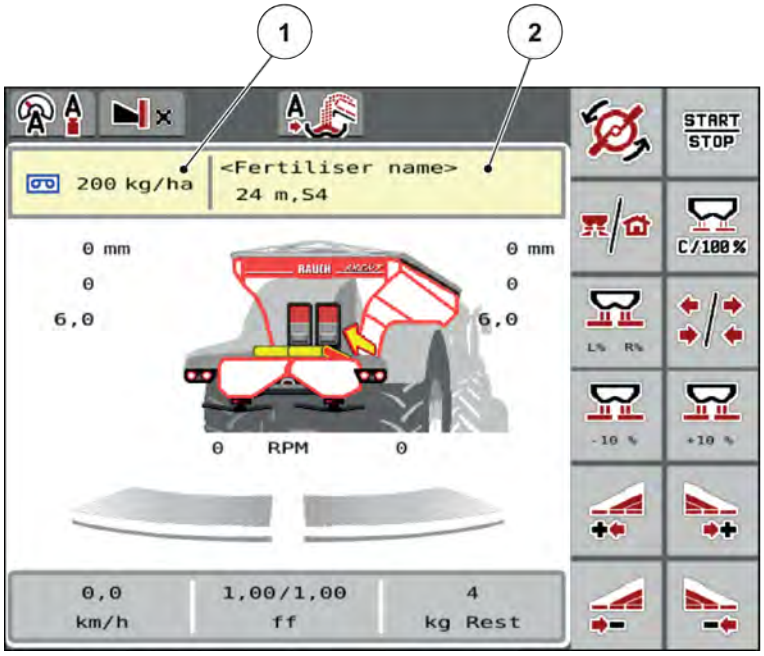


Fig. 22: Managing the fertilizer chart via the touch screen

[1] Button Application rate

[2] Button Fertiliser chart

▶ Enter the new value in the input field.

▶ Press OK.

The new value is saved in the machine control unit.

4.6 Machine settings

The settings for the tractor and the machine can performed in this menu.

▶ Call up the menu Machine settings.

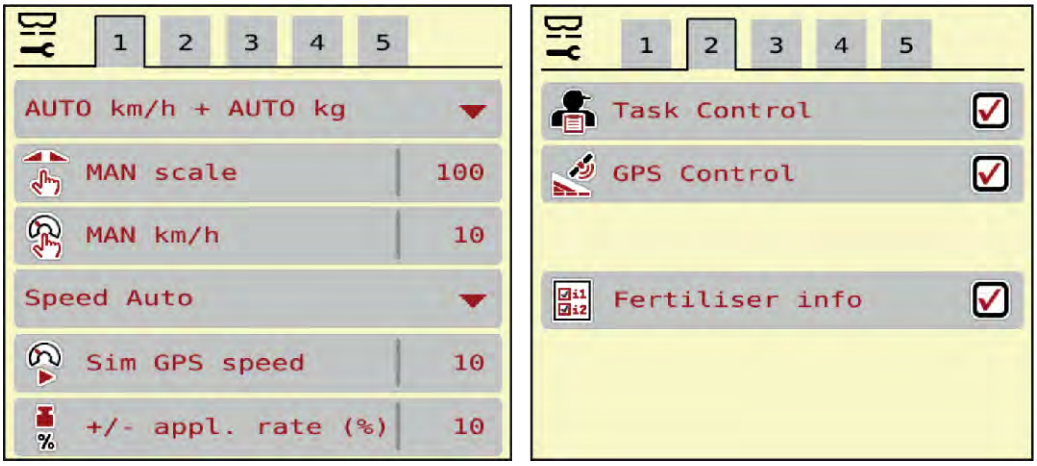


Fig. 23: Machine settings menu, tab 1 and 2

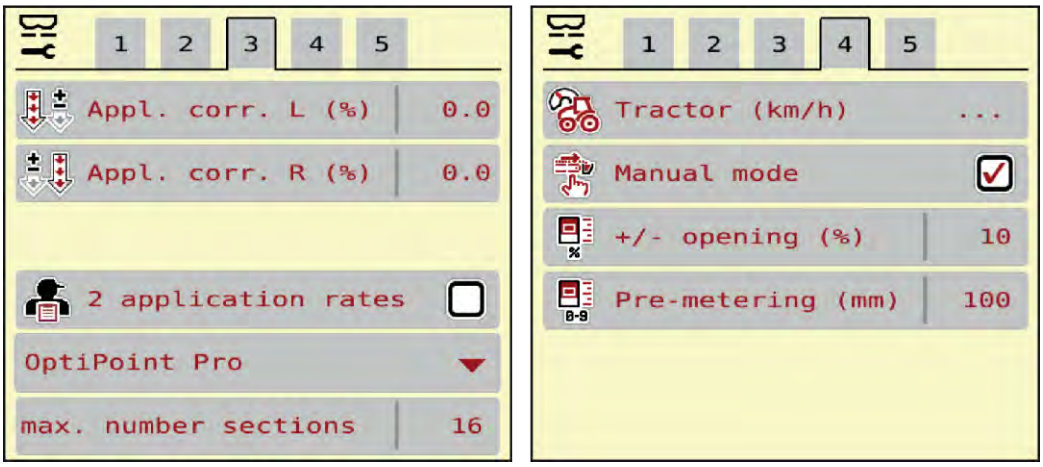


Fig. 24: Machine settings menu, tab 3 and 4

Not all parameters are displayed simultaneously on one screen. Use the left/right arrow keys to skip to the next or previous menu windows (tabs).

Sub-menu	Meaning	Description
AUTO/MAN mode AUTO/MAN mode	Specifying automatic or manual operating mode	*4.6.1 AUTO/MAN mode*
MAN scale MAN scale	Setting the manual scale value. (only influences the respective operating mode)	To be entered in a separate input window.
MAN km/h MAN km/h	Setting the manual speed. (only influences the respective operating mode)	To be entered in a separate input window.

Sub-menu	Meaning	Description
Speed signal source Speed/signal source	Selection/limitation of the speed signal • Speed AUTO (automated selection of either transmission or radar/GPS [1]) • GPS J1939 [1] • NMEA 2000	
Sim GPS speed Sim GPS speed	For GPS J1939 only: Indication of forward speed in the event of loss of the GPS signal	**NOTE!** The entered forward speed is to be maintained constantly at all times.
+/- appl. rate (%) +/- appl. rate (%)	Presetting for the change of quantity	To be entered in a separate input window
Task Control Task Control	Activation of the ISOBUS Task Controller functions for documentation and for application map spreading • Task Control on (checked) • Task Control off	
GPS-Control GPS-Control	Activation of the function to control the machine sections via GPS control unit • Task Control on (checked) • Task Control off	
Fertiliser info Fertiliser info	Activation of the fertilizer information (fertilizer name, type of spreading disc, working width) in the working screen	
kg level sensor kg level sensor	Input of the remaining quantity to trigger an alarm message via the weigh cells	

[1)] The manufacturer does not assume any liability in the event of a loss of the GPS signal.

Sub-menu	Meaning	Description
Application rate correction • Appl. corr L - Appl. corr. L (%) • Appl. corr R - Appl. corr. R (%)	Correction of the deviations between the entered application rate and the actual application rate • Correction in percent on the right and/or left side	
2 application rates 2 application rates	Only when working with application maps: Activation of two separate application rates for the right and left side, respectively	
OptiPoint version	Select the OptiPoint calculation to be used	
max. number sections max. number sections	Enter the number of sections across the whole width of the boom	**16** is the factory default setting
Tractor (km/h) Tractor (km/h)	Determining or calibrating the speed signal	*4.6.4 Forward speed calibration*
Manual mode Manual mode	Manual overloading. If the check is set, automatic overloading is deactivated.	*Manual (AXIS-PowerPack only)*
Opening (%) +/- opening (%)	No function	
Pre-metering (mm) Pre-metering (mm)	Enter the manual opening settings for the pre-metering slide The display is only for information purposes.	**100** is the factory default setting

4.6.1 AUTO/MAN mode

The machine control unit automatically adjusts the metering quantity according to the speed signal. This adjustment is influenced by the application rate, working width, and flow factor.

Normally with the machine is operated in **automatic** mode.

The machine is operated in **manual** mode only in the following cases:
- If there is no speed signal (radar or wheel sensor not available or defective)
- Application of slug pellets or seeds (fine seeds)

For uniform spreading of the spreading material, a **constant forward speed** must be maintained in manual operating mode.

Spreading in different operating modes is described in *5 Spreading operation with AXIS-PowerPack*.

Menu	Meaning	Description
AUTO km/h + AUTO kg	Selection of measuring the mass flow for automatic mode	Page *75*
AUTO km/h	Selecting automatic mode	Page *78*
MAN km/h	Adjustment of forward speed for manual mode	Page *78*
MAN scale	Metering slide adjustment for manual mode This operating mode is suitable for spreading slug pellets or fine seeds.	Page *79*

Selecting the operating mode

- ▶ Start the machine control unit.
- ▶ Call up the Machine settings > AUTO/MAN mode menu.
- ▶ Select the desired menu item from the list.
- ▶ Press OK.
- ▶ Follow the instructions on the screen.

We recommend that the flow factor is displayed on the working screen. This allows monitoring of the mass flow control whilst spreading. See *2.2.2 Display fields*.

Important information on the use of operating modes for spreading operations is provided in chapter *5.2 Fertilizer spreading*.

4.6.2 +/- quantity

This menu allows setting of the percentage increment of the **application rate change** for normal spreading.

The preset value of the metering slide opening serves as the basis (100 %).

Function keys during operation:

- \+ Quantity/- Quantity: The spreading quantity can be changed at any time by means of the +/- Quantity factor.
- C 100 % key back to the default values.

Specifying the application rate reduction:

▶ Call up the Machine settings > +/- appl. rate (%) menu.

▶ Enter the percentage by which the application rate is to be changed.

▶ Press OK.

4.6.3 Overloading function operating mode

The overloading function with different operating modes is described in chapter *5.1 Overloading*.

- Refer to the operator's manual for the AXENT large area spreader.

Overloading of fertilizer in spreading unit is controlled using 2 optional operating modes.

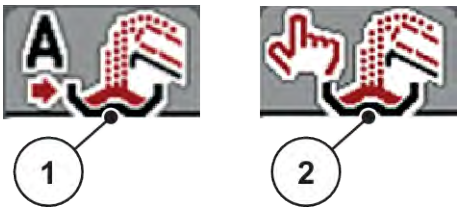


Fig. 25: Symbolic operating mode

[1] Automatic mode [2] Manual

It is recommended to always work in automatic operating mode Automatic mode. The machine control system fully automatically controls the valves for fertilizer supply according to sensor information.

In operating mode Manual that overloading is started and stopped by pressing the activation button. The sensor conditions signal the required steps.

Selecting the operating mode

▶ Switch on the machine control unit.

▶ Call up the Machine settings > AUTO/MAN mode menu.

▶ Select the desired menu item from the list.

▶ Press OK.

■ ***Automatic***

⚠WARNING!

Danger of crushing and shearing due to externally-actuated components

The conveyor belt will move without warning and can cause personal injury.

- ▶ Ensure that nobody is present in the hazard zone.

Please also refer to *5.1.1 Overloading in automatic operating mode*

■ ***Manual (AXIS-PowerPack only)***

⚠CAUTION!

Risk of slipping and environmental damage due to ejected fertiliser

If overloading is active, overflow in the fertiliser spreader may occur and excessive fertiliser may leak unexpectedly from the hopper.

Persons may slip and be injured.

Risk for the environment.

- ▶ Make sure nobody is present in the spreading zone of the machine before switching on the spreading discs.
- ▶ Activate the **Manual** mode briefly in exceptions.
- ▶ Use the **Automatic** mode if possible.

▶ Call up the menu Machine settings.

▶ Select the Manual mode menu item.

Warning message no. 39 is displayed. See 6.1 Meaning of the alarm messages.

▶ Acknowledge the alarm message by selecting the green check icon.

The warning message is acknowledged.

The box is checked: The operating mode is active.

▶ Press the Start overloading key.

Overloading is started.

Overloading is implemented in the same sequence as for the Automatic mode operating mode.

▶ Press the Start overloading key.

Overloading is stopped.

- See also *5.1.2 Overloading in manual operating mode*.

4.6.4 Forward speed calibration

The speed calibration is the basic requirement for a precise spreading result. Factors such as tire size, a different tractor, all-wheel drive, slippage between tires and ground, ground characteristics, and tire pressure influence the speed measurement and therefore the spreading result.

Exact calculation of the number of speed pulses over 100 m is very important for the precise discharge of the fertilizer quantity.

Preparing the speed calibration

- ▶ Conduct the calibration on the field. That will reduce the influence of the ground conditions on the calibration results.
- ▶ Determine a 100 m long reference track as precisely as possible.
- ▶ Switch on all-wheel drive.
- ▶ Fill only half of the machine, if possible.

■ ***Accessing the speed settings***

Up to 4 different profiles for the type and number of pulses can be saved and names (such as the names of tractors) assigned to them.

Before performing spreading, check that the correct profile has been called up in the control unit.

- ▶ Call up the Machine settings > Tractor (km/h) menu.

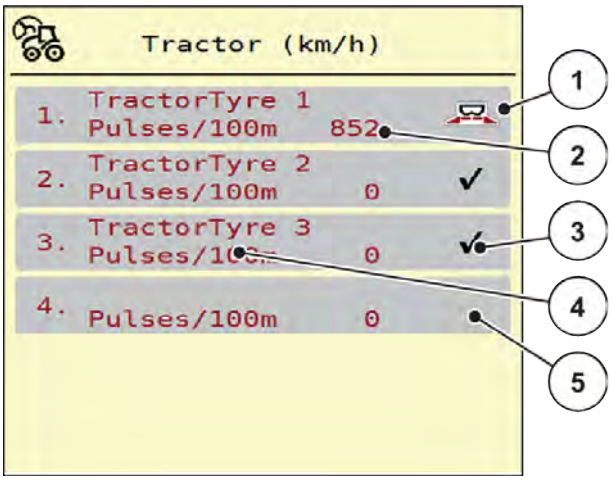


Fig. 26: Menu Tractor (km/h)

[1] Active tractor profile
[2] Display of the number of pulses over 100 m
[3] Profile is created, currently not used
[4] Tractor type
[5] Empty tractor profile

■ ***Recalibrating the speed signal***

Either overwrite an existing profile or create a profile in an empty memory location.

- ▶ In the Tractor (km/h) menu, select the desired profile.
- ▶ Press the **Enter key**.
- ▶ Open **Name field [1]**.
- ▶ Enter the name of the profile.

The profile is active.

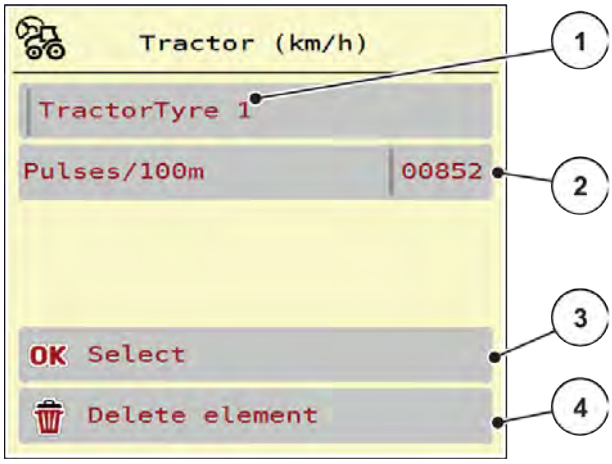


Fig. 27: Tractor profile

[1] Tractor name field
[2] Display of the number of pulses over 100 m
[3] Confirm the profile selection
[4] Delete profile

The name is restricted to 16 characters.

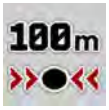
We recommend using the name of the tractor for ease of understanding.

The number of pulses of the speed signal must still be specified below. If the exact pulse count is known, input it directly:

- ▶ From the selected tractor profile, select the Pulses/100m menu entry.

The Pulses menu is displayed for manual entry of the pulse count.

If the exact pulse count is **unknown**, start a **calibration**.



- ▶ Press the calibration key in the tractor profile.

  The calibration run working screen is displayed.

- ▶ Press Start at the starting position of the reference distance.

  The pulse display is now zero.

  The machine control unit is ready for counting pulses.
- ▶ Drive along the 100 m long reference distance.
- ▶ Stop the tractor at the end of the reference distance.

▶ Press Stop.

The display shows the number of received pulses.

The new pulse count is saved.

Revert to the profile menu.

4.7 Fast emptying

In order to quickly clean the machine after spreading or to quickly empty any residual material, select the Fast emptying menu.

For this purpose, before placing the machine in storage, we recommend **completely opening** the metering slides with the fast emptying function and switching off the control unit in this state. This prevents the build-up of moisture in the hopper.

Before starting the fast emptying process, make sure that all the requirements have been met. To do this, refer to the operator's manual for the mineral fertilizer spreader (discharging residual material).

⚠CAUTION!

Risk of injury due to automatic adjustment of the drop point

The Approach drop point Yes = Start alarm will appear for **EMC machines**. When you press the Start/Stop function key, the drop point automatically moves to position 0. After the calibration, the drop point automatically moves to the preset value again. This may cause injury and property damages.

▶ Before pressing the Start/Stop key, ensure that **nobody** is present in the hazard zone of the machine.

Carrying out the fast emptying process:

- ▶ Call up the Main menu > Fast emptying menu.
- ▶ Press the **function key** to select the section for which the fast emptying function is to be performed.

  The selected section is displayed as an icon (Fig. 28 position [3]).
- ▶ Press **Start/Stop**.

  The fast emptying process starts.
- ▶ Press **Start/Stop** when the hopper is empty.

  Fast emptying is complete.
- ▶ ESC to return to the Main menu.

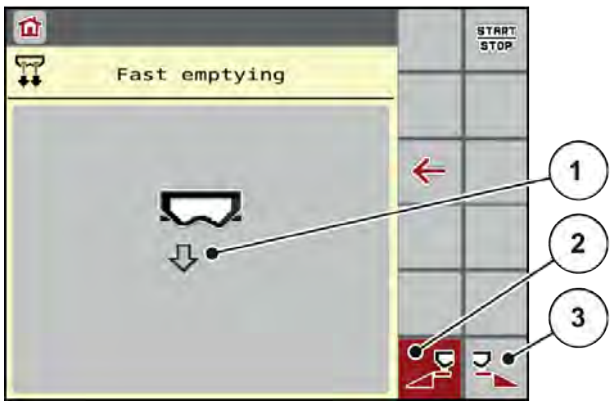


Fig. 28: Menu Fast emptying

[1] Icon for fast emptying (here: left side selected, not started)

[2] Fast emptying of the right section (selected)

[3] Fast emptying of the left section (not selected)

4.8 System/Test

SYS TEST

In this menu, the system and test settings for the machine control unit can be configured.

- ▶ Call up the Main menu > System / Test menu.

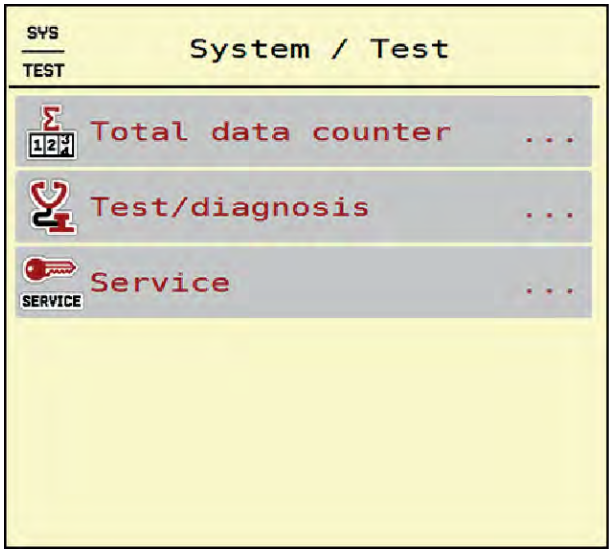


Fig. 29: System / Test - System / Test menu

Sub-menu	Meaning	Description
Total data counter Total data counter	Display list • spread quantity in kg • spread area in ha • spread time in h • distance traveled in km	*4.8.1 Total data counter*
Test/diagnosis Test/diagnosis	Checking of actuators and sensors	*4.8.2 Test/diagnosis*
Service Service	Service settings	Password-protected; only accessible for service personnel

4.8.1 Total data counter

In this menu, all of the spreader's counter readings are displayed.

This menu is for information purposes only.

- kg calculated - kg calculated: spread quantity in kg
- ha - ha: spread area in ha
- hours - hours: spread time in h
- km - km: distance traveled in km

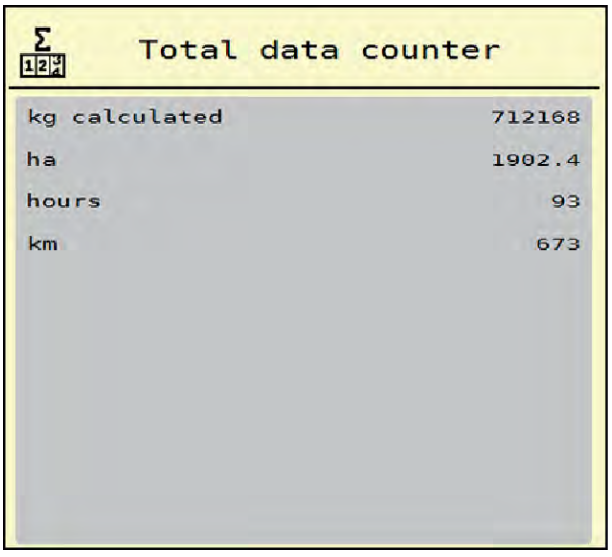


Fig. 30: Total data counter - Total data counter menu

4.8.2 Test/diagnosis

The Test/diagnosis menu allows the functions of all actuators and sensors to be checked.

This menu is for information purposes only.

The list of sensors depends on the equipment of the machine.

⚠CAUTION!

Risk of injury due to moving machine parts

During the tests, machine parts may move automatically.

▶ Check that there are no personnel anywhere near the machine.

Sub-menu	Meaning	Description
Voltage Voltage	Checking the operating voltage	
Metering slide Metering slider	Moving the left and right metering sliders	*Example of metering slides*
Test points metering slide Test points slider	Test for approaching the various position points of the metering sliders	Calibration check
Drop point Drop point	Manual movement of the drop point motor	
Test points drop point Test points drop pt.	Approaching the drop point	Calibration check
LIN bus LIN bus	Checking the assemblies registered via LIN bus	*Example: LIN bus*
Spreading disc Spreading disc	Manual activation of the spreading disc	
Agitator Agitator	Checking the agitator	
EMC sensors EMC sensors	Checking the EMC sensors	
Weigh cells Weigh cell	Checking the sensors	
Level sensors Level sensor	Checking the level sensors	
Conveyor belt drive Belt drive	Manual operation of the conveyor belt	
SpreadLight SpreadLight	Checking the operating lights	

■ ***Example of metering slides***

▶ Call up the Test/diagnosis > Metering slider menu.

The display shows the status of the motors/ sensors and the test points of the metering slides.

The Signal display shows the status of the electrical signals for the left and right side separately.

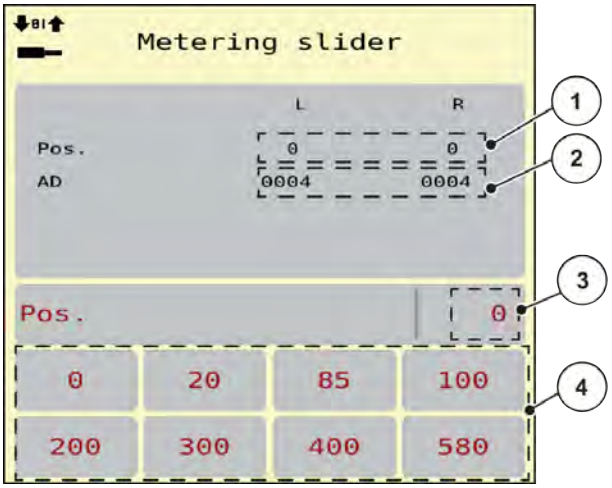


Fig. 31: Test/diagnosis; Example: Metering slider - Metering slider

[1] Signal display
[2] AD values
[3] Manual input of the position
[4] Test points of the metering slides

⚠CAUTION!

Risk of injury due to moving machine parts

During the tests, machine parts may move automatically.

▶ Check that there are no personnel anywhere near the machine.

The up/down arrows can be used to open and close the metering slides.

■ ***Example: LIN bus***

[1] Status display
[2] Start self-test
[3] Connected LIN participants

▶ Call up the System / Test > Test/diagnosis menu.

▶ Call up the LIN bus menu item.

The display shows the status of the actuators/ sensors.

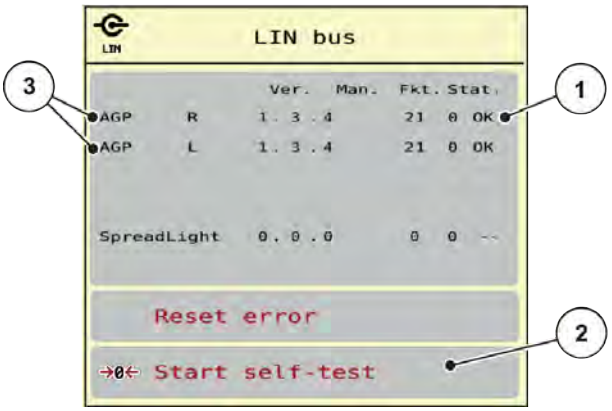


Fig. 32: System / Test; Example: Test/diagnosis

Linbus participant status notification

The LIN participants indicate various conditions:
- 0 = OK; no equipment fault
- 2 = blockage
- 4 = overload

⚠CAUTION!

Risk of injury due to moving machine parts

During the tests, machine parts may move automatically.

▶ Check that there are no personnel anywhere near the machine.

When the system is restarted, the status is checked and typically reset. Since the status is not always reset automatically in certain cases, it is now also possible to perform a manual RESET.

- Press the Reset error button.

4.8.3 Service

An input code is required to configure the settings in the Service menu. These settings can only be modified by authorized service personnel.

4.9 Info

The Info menu provides information on the machine control unit.

This menu provides information on the configuration of the machine.

The information list depends on the equipment of the machine.

4.10 Weighing/Trip counter

This menu provides values regarding spreading work performed and functions for the weighing operation.

▶ Call up the Main menu > Weighing/Trip count. menu.

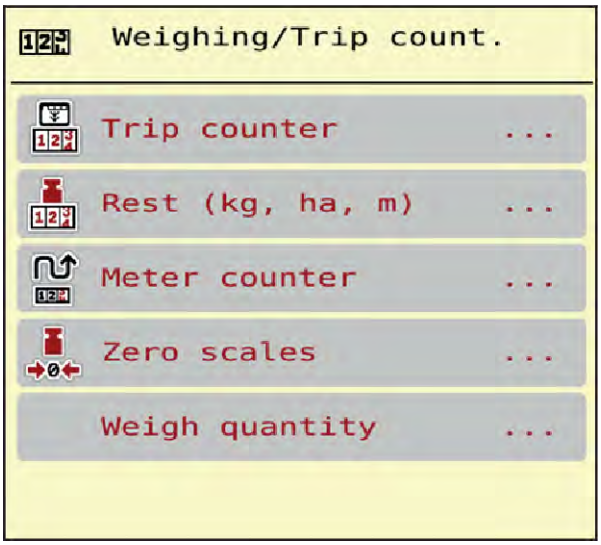


Fig. 33: Weighing/Trip count. - Weighing/Trip count. menu

Sub-menu	Meaning	Description
Trip counter Trip counter	Display of the fertilizer quantity spread, area spread, and spread distance	*4.10.1 Trip counter*
Rest (kg, ha, m) Rest (kg, ha, m)		*4.10.2 Rest (kg, ha, m)*
Meter counter Meter counter	Display of the distance traveled since the last reset of the meter counter	Reset (zeroing) by pressing the **C 100%** key
Zero scales Zero scales		*4.10.3 Zero scales*

4.10.1 Trip counter

In this menu, the values of the spreading work performed can be interrogated, the remaining spreading quantity can be monitored and the trip counter can be reset by deleting the value.

▶ Call up the Weighing/ Trip count > Trip counter menu.

The Trip counter menu appears.

During spreading, i.e. with the metering slides open, the display can be switched to the Trip counter menu, where the current values can be viewed.

For continuous monitoring of the values during spreading, the values kg trip, ha trip or m trip can be assigned to the freely selectable display fields in the working screen, see *2.2.2 Display fields*.

Clear down the trip counter

▶ Access the sub-menu Weighing/Trip count. > Trip counter.

The values for spread quantity, area, and distance calculated since the last deletion are displayed.

▶ Press the Delete trip counter - Delete trip counter button.

All values of the trip counter are reset to 0.

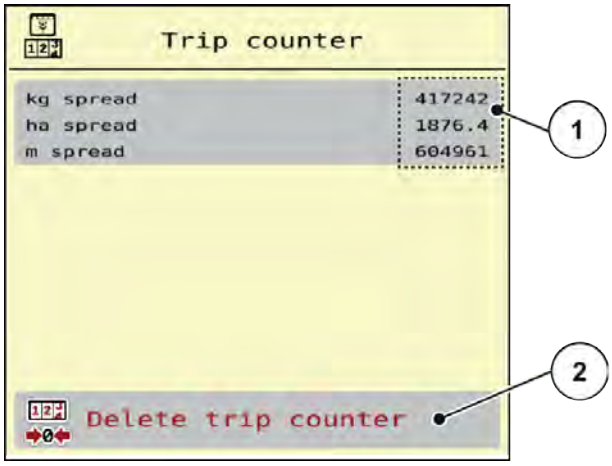


Fig. 34: Trip counter - Trip counter menu

[1] Spread quantity, area and distance display fields

[2] Delete trip counter - Delete trip counter

4.10.2 Rest (kg, ha, m)

The Rest (kg, ha, m) menu can be interrogated to check the quantity remaining in the hopper. The menu indicates the possible area (ha) and distance (m) which can still be spread with the remaining fertilizer quantity.

For weighing spreaders the current fill weight can be determined by weighing. In all other spreaders, the remaining fertilizer quantity is calculated from the fertilizer and machine settings as well as from the drive signal, and the filling quantity must be entered manually (see below). The Application rate and Working width values cannot be changed in this menu. They are for information purposes only.

▶ Call up the Weighing/Trip count. > Rest (kg, ha, m) menu.

The Rest (kg, ha, m) menu appears.

[1] kg rest - kg left input field

[2] Appl. rate (kg/ha) - Application rate, Working width (m) - Working width display fields, and the available spread area and distance

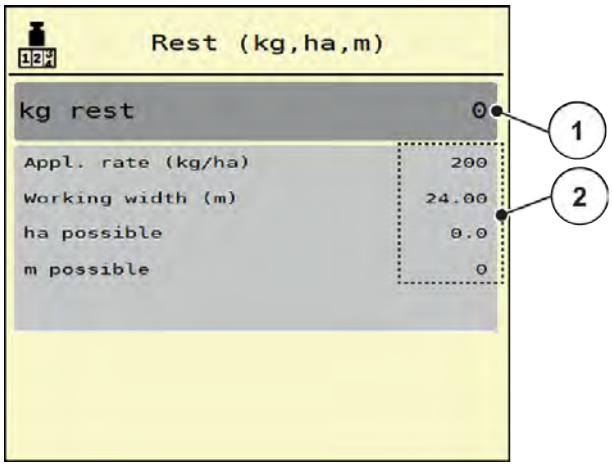


Fig. 35: Rest (kg, ha, m) - Rest (kg, ha, m) menu

4.10.3 Zero scales

In this menu, set the weighing value for the empty hopper to 0 kg.

For taring the scales, the following requirements have to be fulfilled:
- the hopper is empty,
- the machine is at a standstill,
- the PTO is switched off,
- the machine is horizontal,
- the machine is at a standstill.

Zero scales:

▶ Call up the Weighing/Trip count. > Zero scales menu.

▶ Press the Zero scales button.

The weighing value for the empty scales is now set to 0 kg.

Tare the scales before each use in order to ensure problem-free calculation of the remaining quantity.

4.11 Operating lights (SpreadLight)

In this menu, the SpreadLight function (optional) is activated, and the spreading pattern can be monitored, even during night-time operation.

The working headlights can be switched on and off in the automatic and/or manual mode via the machine control unit.

[1] Turn off delay (s) Turn off delay (s)
[2] Manual mode: Switch on the working headlights
[3] Activate automatic mode

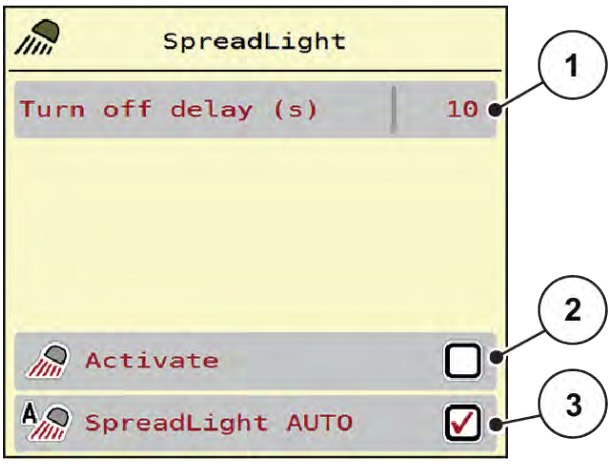


Fig. 36: Menu SpreadLight

Automatic mode:

In the automatic mode, the operating lights are switched on as soon as the metering slides open and the spreading process starts.

- ▶ Call up the Main menu > SpreadLight menu.
- ▶ Put a check mark in the menu item SpreadLight AUTO [3].

  The operating lights are switched on when the metering slides open.
- ▶ Enter a turn off duration [1] in seconds.

  The operating lights will switch off at the end of the entered time, if the metering slides are closed.

  Range from 0 to 100 seconds.
- ▶ Remove the check mark in the menu item SpreadLight AUTO [3].

  The automatic mode is deactivated.

Manual mode:

The working lights can be switched on and off in manual mode.

- ▶ Call up the Main menu > SpreadLight menu.
- ▶ Put a check mark in the menu item Activate [2].

The working lights are activated and remain on until the check mark is cleared or the menu is exited.

4.12 Special functions

4.12.1 Changing the system of units

The settings are performed in the ISOBUS terminal.

- ▶ Open the Settings menu for the terminal system.
- ▶ Call up the menu Unit.
- ▶ Select the desired unit system from the list.
- ▶ Press OK.

All values of the various menus are converted.

Menu/value	Conversion of metric to imperial units
kg left	1 x 2.2046 lb.-mass (lbs left)
ha left	1 x 2.4710 ac (ac left)
Working width (m)	1 x 3.2808 ft
Rate (kg/ha)	1 x 0.8922 lbs/ac
Mounting height cm	1 x 0.3937 in

Menu/value	Conversion of metric to imperial units
lbs left	1 x 0.4536 kg

Menu/value	Conversion of metric to imperial units
ac left	1 x 0.4047 ha
Working width (ft)	1 x 0.3048 m
Appl. rate (lb/ac)	1 x 1.2208 kg/ha
Mounting height in	1 x 2.54 cm

4.12.2 Using the joystick

A joystick may also be used as an alternative to the settings in the working screen of the ISOBUS terminal.

Contact your dealer if you wish to set up the use of a joystick.

- Please refer to the instructions in the operator's manual of the ISOBUS terminal.

■ CCI A3 joystick

Fig. 37: CCI A3 Joystick, front and rear

[1] Light sensor
[2] Display/touch panel
[3] Plastic grid (replaceable)
[4] Shift key

■ CCI A3 Joysticks operating levels

The Level key allows switching between three operating levels. The plane that is active in each case is indicated by the position of an illuminated bar at the lower edge of the display.

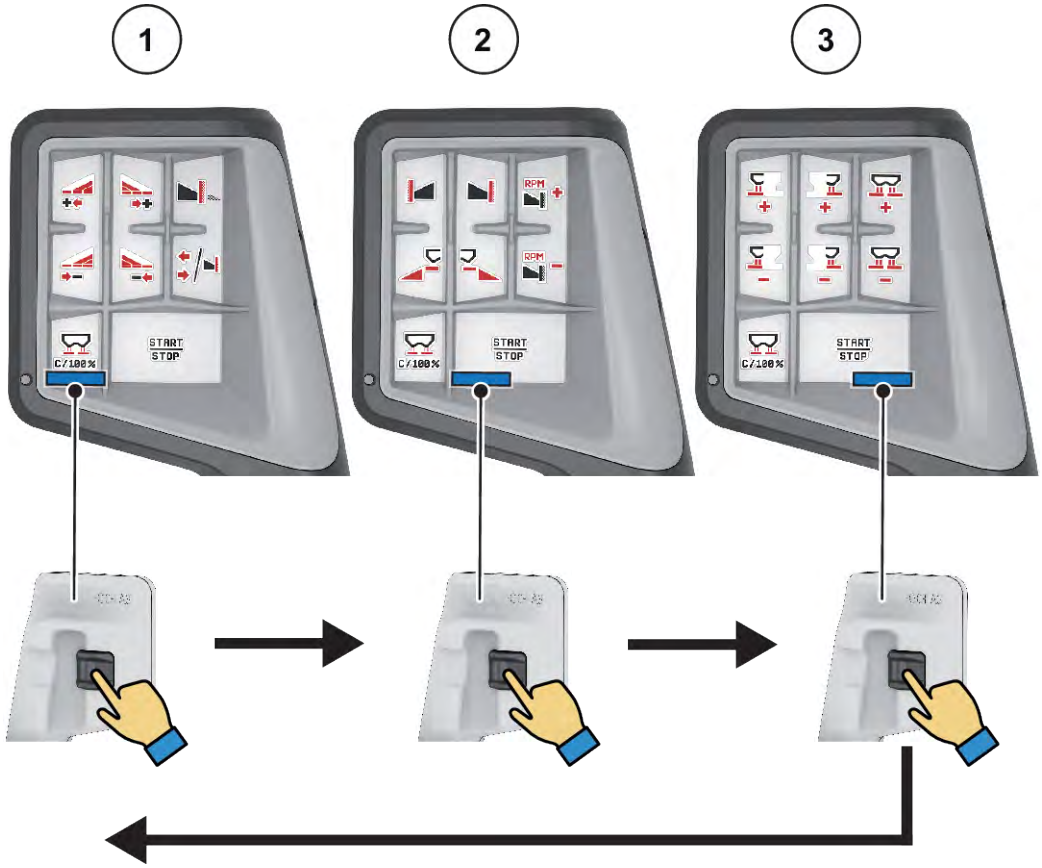


Fig. 38: CCI A3 joystick, operating level display

[1] Level 1 active
[2] Level 2 active
[3] Level 3 active

■ CCI A3 joystick button functions

The joystick offered is pre-programmed with specific functions at the factory.

For the meaning and function of the symbols see *2.3 Library of icons used*.

The assignment of the keys differs from one machine type to another.

[1] Button functions Level 1
[2] Button functions Level 2
[3] Button functions Level 3

To change the assignment of level functions to the three keys, see the instructions in the joystick operator's manual.

4.12.3 WIFI module

■ ***Special equipment***

A WiFi module can be used for communication between a smartphone and the ECU. The following functions are possible:

- Transmission of information from the fertilizer charts app to the ECU. This way, the fertilizer settings no longer need to be entered manually.
- Transmission of the residual material weight display from the ECU on the smartphone.

Fig. 39: WiFi module

You can find more information on assembly of the WiFi module and communication with the smartphone in the WiFi module assembly instructions.

- The WiFi password is: **quantron**.

5 Spreading operation with AXIS-PowerPack

5.1 Overloading

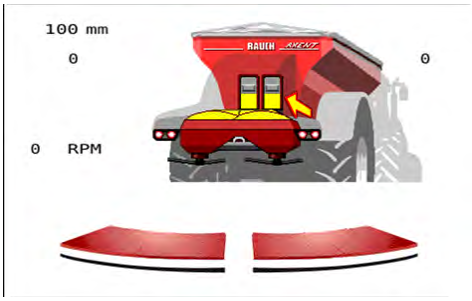
5.1.1 Overloading in automatic operating mode

Overloading is fully automatic and always in the same sequence.

The sensor conditions and overloading can be observed on the working screen. However, the messages are displayed without sound.

Requirement:

- The automatic operating mode is active.
  - See *4.6.3 Overloading function operating mode*
- The pre-metering slide is open.

Function/control	Working screen display
▶ Activate the hydraulic control unit for the tractor.	
▶ Spreading operation start. *The conveyor belt starts up.* *The PowerPack container fills up. Once the maximum filling quantity is reached, the belt stops automatically.*	
▶ Start spreading.	
The overload runs continuously depending on the spread quantity. The belt speed adapts automatically.	

Function/control	Working screen display
▶ Press the start/stop key at the end of work. *The spreading discs will stop.* *The conveyor belt is stopped.*	

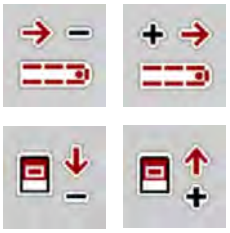
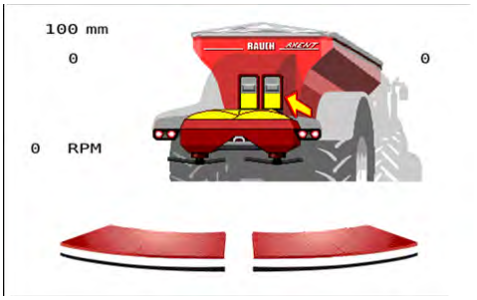
5.1.2 Overloading in manual operating mode

Overloading is started and stopped by pressing the Start overloading key if a spreader side is empty. The sensor conditions signal the required steps.

Requirement:

- The manual operating mode is active.
  - See *4.6.3 Overloading function operating mode*
- The spreading operation is started.

Function/control	Working screen display
One of the two level sensors (LLST or LRST) is reporting empty.	
▶ Press Start overloading.	
Overloading is active.	

Function/control	Working screen display
• The conveyor belt starts up simultaneously. • Fertiliser flow runs into the spreading unit hopper.	
▶ Adapt the speed of the conveyor belt.	
Both the level sensors are active.	
The overflow is reached.	
▶ Press Start overloading. *The conveyor belt is stopped.*	
Overloading is completed.	

5.2 Fertilizer spreading

5.2.1 Working with sections

■ Displaying the spreading type in the operating screen

The machine control unit offers 4 different types of spreading for the spreading operation. These settings can be configured directly in the working screen. During the spreading operation, you can switch between the spreading types in order to optimally adapt to the field requirements.

Button	Spreading type
	Activate section on both sides
	Section on the left, border spreading function available on the right
	Section on the right, border spreading function available on the left
	Boundary spreading function on both sides

▶ Press the function key several times until the desired spreading type is displayed.

Fertilizer can be spread to sections on one side or both sides, in order to adapt the full spreading width to the field requirements. Every spreading side can be set continuously in the automatic mode and to a maximum of 4 steps in the manual mode.

▶ Press the border spreading/sections toggle key.

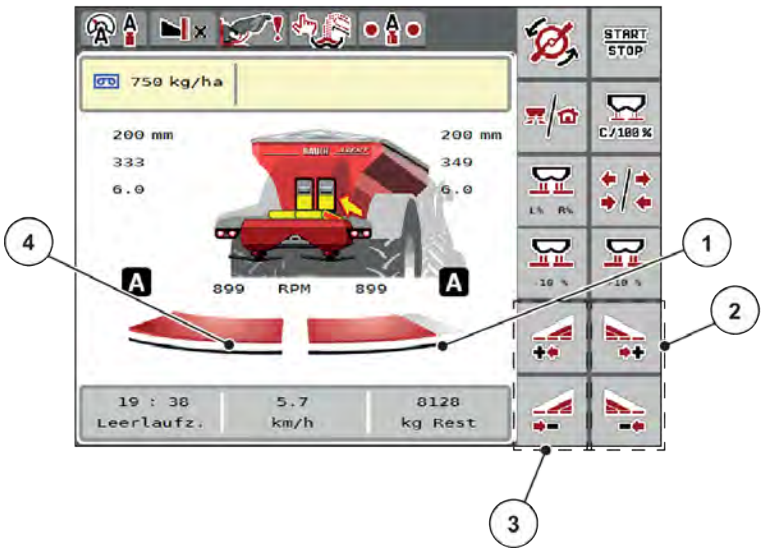


Fig. 40: Working screen: Sections with 2 sections

[1] The right section is reduced to several steps.

[2] Function keys for increasing or reducing the spreading width on the right

[3] Function keys for increasing or reducing spreading width on the left

[4] The left spreading side spreads across the entire half.

- Each section can be reduced or increased in steps.
- Section control is possible from the outside to the inside or vice versa. See *Fig. 41 Automatic section control*

We recommend restarting the terminal in the following cases:
- The working width is changed.
- A different fertilizer chart entry is called up.

After restarting the terminal, the section display changes to match the new settings.

▶ Press the reduce left spreading width or the reduce right spreading width function key.

The section of the spreading side will be reduced by one step.

▶ Press the Increase left spreading width function key or the Increase right spreading width function key.

The section of the spreading side will be increased by one step.

The sections are **not** graded proportionally. The VariSpread spreading width assistant sets the spreading widths automatically.

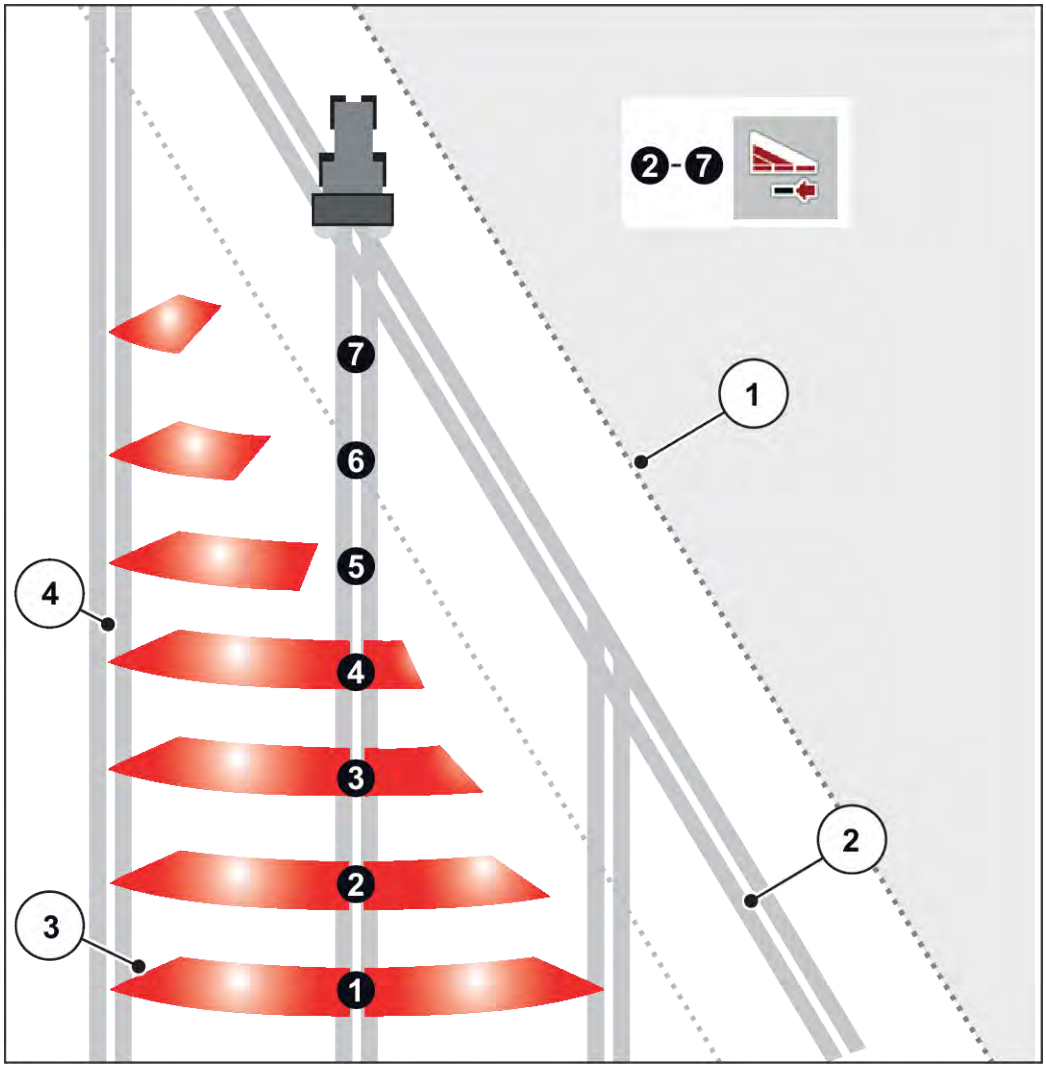


Fig. 41: Automatic section control

[1] Field edge
[2] Headlands tramline
[3] Sections 1 to 4: Section reduction on the right hand side
Sections 5 to 7: further section reductions
[4] Tramline in the field

■ Spreading operation with one section and in boundary spreading mode

During spreading operation, the sections can be changed gradually and border spreading can be deactivated. The figure below shows the working screen with border spreading activated and a section activated.

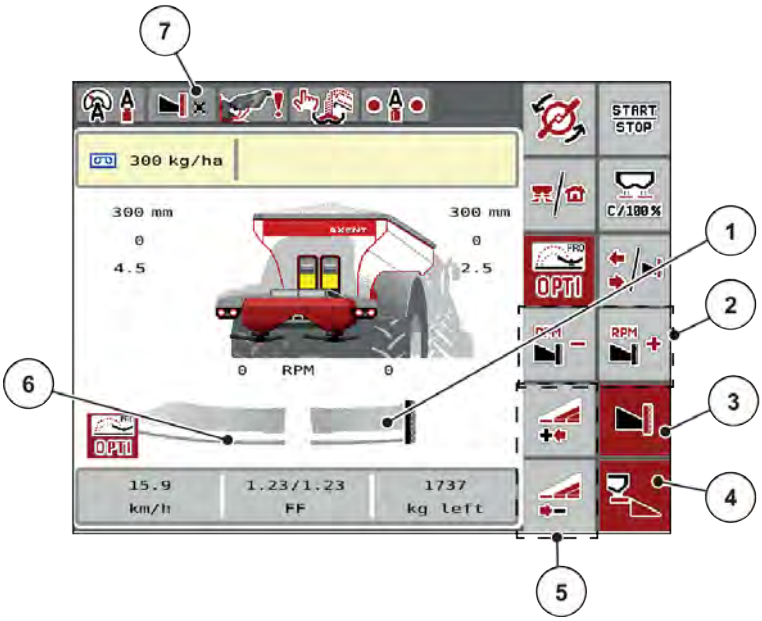


Fig. 42: Working screen with one section on the left, border spreading side on the right

[1] Spreading side on the right in the border spreading mode
[2] Increasing and reducing the spreading disc speed on the border spreading side
[3] Border spreading mode is activated
[4] Right spreading side is activated
[5] Reduce the spreading disc speed on the border spreading side
[6] Left section adjustable in 4 steps
[7] The current border spreading mode is the boundary.

- The application rate on the left is set to the full working width.
- The **right border spreading** function key has been pressed, border spreading is active, and the application rate is reduced by 20%.
- Press the **reduce left spreading width** function key to steplessly reduce the section.
- Press the **C/100 %** function key to revert immediately to the full working width.
- Pressing the right border spreading function key deactivates border spreading.

The border spreading function is also available in automatic mode with GPS Control. The border spreading side must be manually operated at all times.

- See *5.2.7 GPS control*.

5.2.2 Spreading with the automatic operating mode (AUTO km/h + AUTO kg)

The AUTO km/h + AUTO kg operating mode allows for continuous regulation of the application rate during the spreading operation. The mass flow control is corrected at regular intervals on the basis of this information. This way, fertilizer metering can be optimized.

The AUTO km/h + AUTO kg operating mode is preselected as the standard factory default.

Requirements for spreading:

- The AUTO km/h + AUTO kg operating mode is active (See *4.6.1 AUTO/MAN mode*).
- The fertilizer settings are defined:
  - Application rate (kg/ha)
  - Working width (m)
  - Spreading disc
  - PTO speed (rpm)

▶ Fill the hopper with fertilizer.

⚠WARNING!

Risk of injury caused by ejected fertilizer

Ejected fertilizer may cause severe injury.

▶ Make sure nobody is present in the spreading zone of the machine before switching on the spreading discs.

Start or stop the transmission **at low PTO speeds only**.

▶ Press Start/Stop

The spreading starts.

We recommend displaying the flow factor in the working screen (refer to *2.2.2 Display fields*), in order to monitor the mass flow control while spreading.

In the event of problems with flow factor control (clogging, ...), after troubleshooting at a standstill, switch to the Fertilizer settings menu and enter the flow factor 1.0.

Resetting the flow factor

If the flow factor has fallen below the minimum value (0.4 and/or 0.2), alarm no. 47 and/or 48 will appear: see *6.1 Meaning of the alarm messages*.

5.2.3 Idle measurement

■ Automatic idle measurement

In order to achieve high control accuracy, the EMC control must regularly measure and store the idling pressure.

The idling measurement for the determination of the idling pressure will start when the system is restarted.

It will also automatically start the idling measurement under the following conditions:

- The defined period since the last idling measurement has expired.
- Changes have been made in the fertilizer settings menu (RPM, type of spreading disc).

During the idling measurement, the window shown alongside appears.

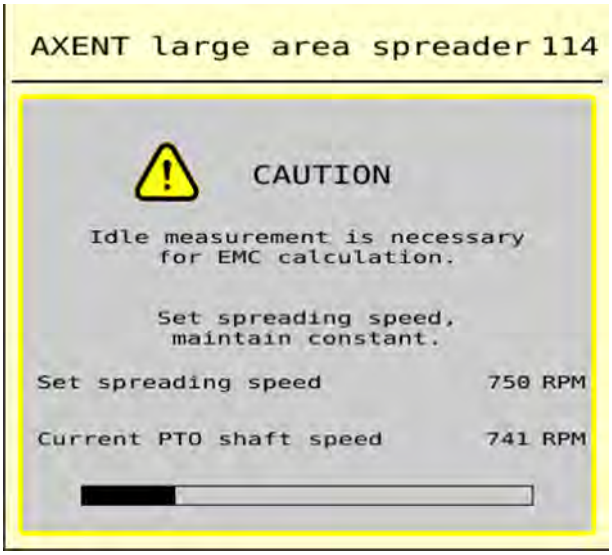


Fig. 43: Alarm display of idling measurement

When starting the spreading disk for the first time, the machine control adjusts the idling torque of the system. See *6 Alarm messages and possible causes*.

If the alarm message is displayed repeatedly even though the transmission oil is warm:

- Compare the installed spreading disc with the type entered in the Fertiliser settings menu. If required, adjust the type.
- Check the spreading disc for tight seat. Re-tighten the wheel nut
- Check the spreading disc for damage. Replace the spreading disc.

Once the idling measurement has been completed, the machine control unit will set the idling time to 19:59 minutes in the display of the working screen.

▶ Press **Start/Stop**.

The spreading starts.

The idling measurement runs in the background, even if the metering slides are closed. However, no screen is shown on the display.

Once this idling time has expired, a further idling measurement is started automatically.

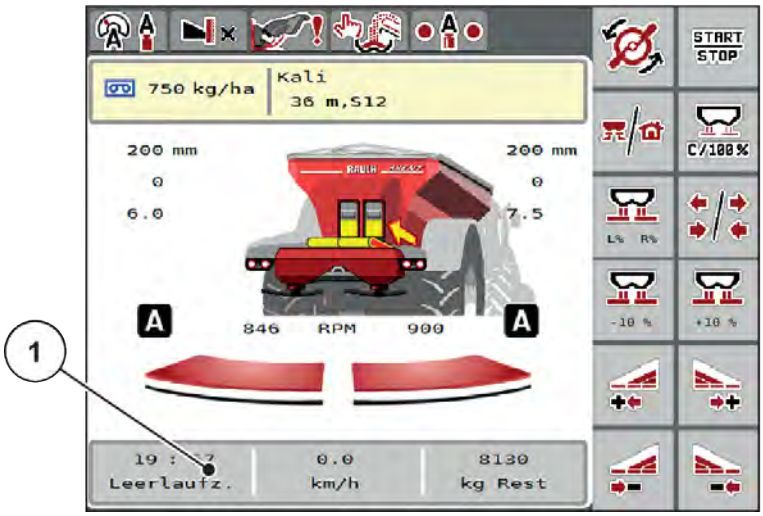


Fig. 44: Display of the idling measurement in the working screen

[1] Time until the next idling measurement

If the spreading disc speed is reduced, no idling measurement can be executed if border spreading or section reduction are activated!

When the metering slides are closed, an idling measurement is always performed in the background (without an alarm message)!

Do not reduce the engine speed during the idling measurement in the headlands!

The hydraulic circuit must be at operating temperature!

■ Manual idle measurement

In the case of unusual changes in the flow factor, start the idle measurement manually.

▶ In the Main menu, press the idle measurement key.

The idle measurement is started manually.

5.2.4 Spreading with the AUTO km/h operating mode

Machines not fitted with weighing technology operate in this mode by default.

Requirements for spreading:

- The AUTO km/h working mode is active (see *4.6.1 AUTO/MAN mode*).
- The fertilizer settings are defined:
  - Application rate (kg/ha)
  - Working width (m)
  - Spreading disc
  - Normal disc speed (rpm)

▶ Fill the hopper with fertilizer.

In order to achieve an optimum spreading result in the AUTO km/h working mode, a calibration should be performed.

▶ Perform a calibration to determine the flow factor or obtain the flow factor from the fertilizer chart and enter the flow factor manually.

⚠WARNING!

Risk of injury caused by ejected fertilizer

Ejected fertilizer may cause severe injury.

▶ Make sure nobody is present in the spreading zone of the machine before switching on the spreading discs.

Start or stop the transmission **at low PTO speeds only**.

▶ Switch on the PTO drive.

▶ Press Start/Stop.

The spreading starts.

5.2.5 Spreading with the MAN km/h operating mode

If there is no speed signal available, the machine will operate in the MAN km/h operating mode.

Requirement

- In order to achieve an optimum spreading result in the MAN km/h operating mode, a calibration should be performed before starting spreading.

- ▶ Call up the Machine settings > AUTO/MAN mode menu.
- ▶ Select the MAN km/h menu item.

  The display shows the input window Forward speed.
- ▶ Enter the value for the forward speed during spreading.
- ▶ Press OK.
- ▶ Configure the fertilizer settings:
  - ▷ Application rate (kg/ha)
  - ▷ Working width (m)
- ▶ Fill the hopper with fertilizer.
- ▶ Perform a calibration to determine the flow factor or obtain the flow factor from the fertilizer chart and enter the flow factor manually.

- ▶ Press **Spreading disc start**.

- ▶ Press Start/Stop

The spreading starts.

Always maintain the set forward speed during spreading.

5.2.6 Spreading in the MAN scale operating mode

In the MAN scale operating mode, the opening of the metering slides can be adjusted manually during the spreading operation.

Work in manual operating mode:

- when there is no speed signal available
- when spreading slug pellets or fine seeds

The MAN scale operating mode is appropriate for slug pellets and fine seeds since the automatic mass flow control cannot be activated due to the low weight reduction.

For uniform spreading of the spreading material, a constant forward speed must be applied in manual operating mode.

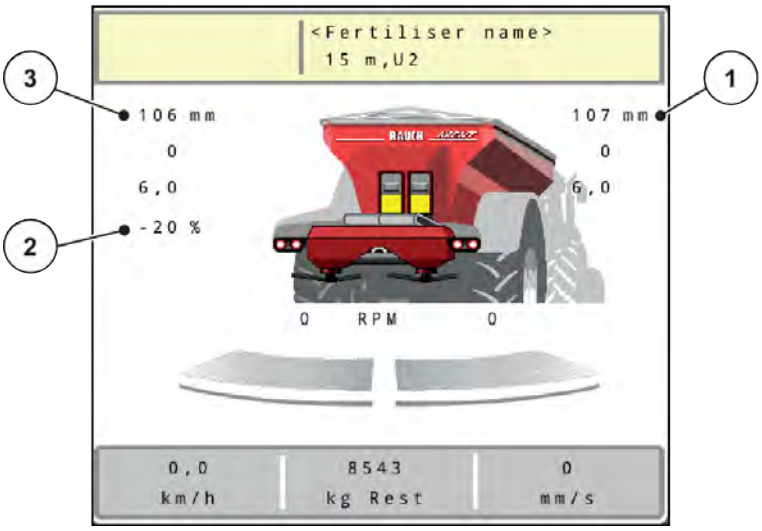


Fig. 45: MAN scale working screen

[1] Display of metering slide target value scale position

[2] Display of current metering slide scale position

[3] Application rate adjustment

▶ Call up the Machine settings > AUTO/MAN mode menu.

▶ Select the MAN scale menu item.

The Position of dosing slider opening window is displayed.

▶ Enter the scale value for the metering slider opening.

▶ Press OK.

▶ Switch to the working screen.

▶ Press **Spreading disc start**.

▶ Press Start/Stop.

The spreading starts.

▶ To change the metering slide opening, press the MAN+ or MAN- function key.

▷ L% R% for selecting the side on which the metering slide aperture is to be adjusted

▷ MAN+ to increase the metering slide aperture or

▷ MAN- to reduce the metering slide aperture.

In order to achieve an optimum spreading result in manual mode as well, we recommend using the metering slide aperture and forward speed values provided in the fertilizer chart.

5.2.7 GPS control

The machine control unit can be combined with an ISOBUS terminal with SectionControl. Various data are exchanged between the two devices to achieve automated control.

The ISOBUS terminal with SectionControl communicates the specifications for the opening and closing of dosing sliders to the machine control unit.

The **A** symbol next to the spreading wedges indicates that the automatic function is enabled. The ISOBUS terminal with SectionControl opens and closes the individual sections depending on the respective position in the field. Spreading starts when the **Start/Stop** button is pressed.

⚠ WARNING!

Risk of injury due to discharged fertilizer

The SectionControl function automatically starts the spreading operation without warning.

Ejected fertilizer can harm the eyes and nasal mucous membranes.

There is also a risk of slipping.

- ▶ Ensure that nobody is present in the hazard zone during the spreading operation.

During spreading, **one or several sections** can be closed at any time. If the sections are activated for automatic operation again, the state last requested is restored.

If the ISOBUS terminal with SectionControl is changed from automatic mode to manual mode, the machine control unit closes the metering slides.

For the use of the **GPS control** functions of the machine control unit, the GPS-Control setting in the Machine settings menu must be activated!

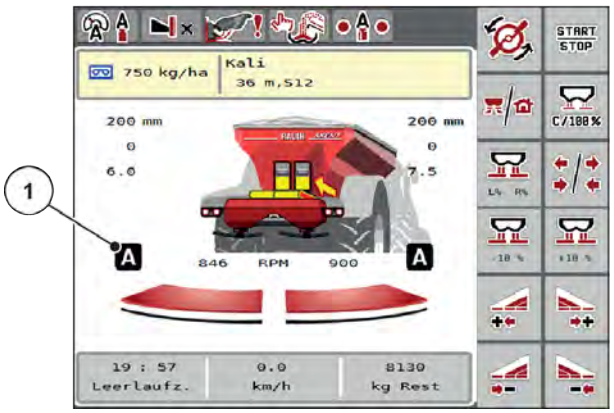


Fig. 46: Spreading operation display in the working screen with GPS Control

The **OptiPoint** functions calculate the optimal turn on and turn off positions for spreading in the headlands based on the settings in the machine control unit; refer to *4.5.9 Calculate OptiPoint*.

To ensure correct configuration of the **OptiPoint** function, enter the correct aerodynamic factor for the fertilizer being used. The aerodynamic factor can be obtained from the fertilizer chart for the machine.

See *4.5.9 Calculate OptiPoint*.

■ *Turn on distance (m)*

The Turn on dist. (m) parameter refers to the switch-on distance [A] measured from the field border [C]. At this position in the field, the metering sliders open. This distance depends on the type of fertilizer and represents the ideal switch-on distance for optimized fertilizer distribution.

[A] Turn on distance
[C] Field border

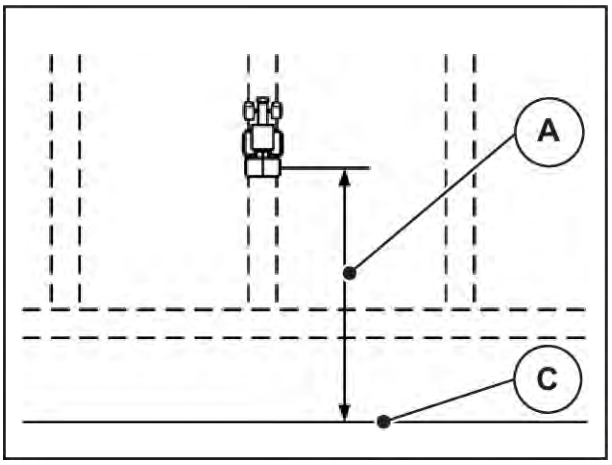


Fig. 47: Distance on (measured from field border)

To change the switch-on position within the field, modify the Turn on dist. (m) value to suit.

- A lower value for this distance means that the switch-on position is closer to the field border.
- A greater value means that the switch-on position is closer to the center of the field.

■ *Turn off distance (m)*

The Turn off dist. (m) parameter refers to the turn off distance [B] measured from the field border [C]. At this position in the field, the metering sliders start to close.

[B] Turn off distance
[C] Field border

To change the switch-off position within the field, modify the Turn off dist. (m) to suit.

- A lower value means that the switch-off position is closer to the field border.
- A greater value means that the switch-off position is closer to the center of the field.

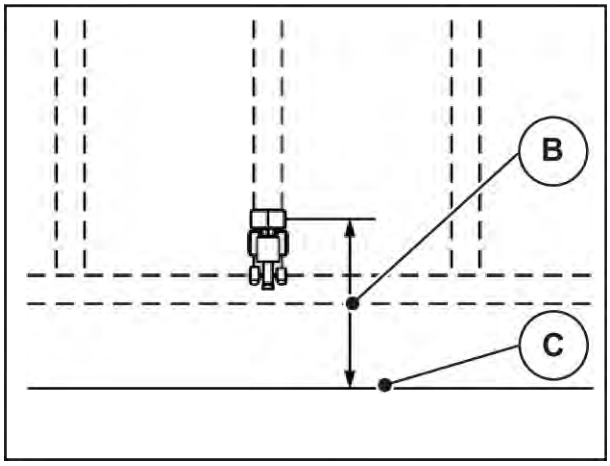


Fig. 48: Distance off (measured from field border)

OptiPoint Pro limits the switch-off distance to a minimum value depending on the fertilizer settings. The reason for this is the calculation in the section control algorithm.

To turn within the headland track, enter a larger distance in Turn off dist. (m). Here, the adjustment must be as low as possible so that the metering slides close as soon as the tractor enters the headland track. An adjustment of the switch-off distance may lead to insufficient fertilization around the switch-off positions in the field.

6 Alarm messages and possible causes

6.1 Meaning of the alarm messages

Various alarm messages can be displayed on the ISOBUS terminal display.

No.	Message in display	Meaning and possible cause
1	Fault in dosing system, stop !	The motor of the metering system cannot reach the specified target value: • Blockage • No position feedback
2	Max. outlet reached! Speed or application rate too high	Metering slide alarm • The maximum metering opening is reached. • The set application rate (+/- quantity) exceeds the maximum metering opening.
3	Flow factor is outside limits	The flow factor must lie within a range between 0.40 and 1.90. • The newly calculated or entered flow factor is outside this range
4	Hopper left empty!	The filling level sensor on the left reports “empty.” • The left hopper is empty.
5	Hopper right empty!	The filling level sensor on the right reports “empty.” • The right hopper is empty.
15	Memory full, Delete one private fertiliser chart	A maximum of 30 fertilizer types are stored in the memory for the fertilizer charts.
16	Approach drop point Yes = Start	Safety request before the drop point is automatically approached • Drop point setting in the menu Fertiliser settings • Fast emptying

No.	Message in display	Meaning and possible cause
17	Error by setting drop point	The drop point adjustment cannot reach the specified target value. • Fault, for instance with the power supply • No position feedback
18	Error by setting drop point	The drop point adjustment cannot reach the specified target value. • Blockage • No position feedback • Calibration test
19	Defect by setting drop point	The drop point adjustment cannot reach the specified target value. • No position feedback
20	Error at LIN bus participant:	Communication problem • Defective cable • Loose plug connector
21	Spreader overloaded!	For weighing spreaders only: The fertilizer spreader is overloaded. • Too much fertilizer in the hopper
22	Unknown condition Function-Stop	Communication problem with terminal • Possible software error
23	Error by setting TELIMAT	The TELIMAT adjustment cannot reach the specified target value. • Blockage • No position feedback
24	Defect by setting TELIMAT	Defective TELIMAT actuator
25	Defect by setting TELIMAT	Defective TELIMAT actuator
30	The discs shall be activated before opening the metering sliders.	Correct software operation • Start spreading discs • Open metering slides
31	Idle measurement is necessary for EMC calculation.	Alarm message before the idle measurement • Activate spreading disc start.

No.	Message in display	Meaning and possible cause
32	Externally controlled parts can be moved.Risk of injury through squeezing and shearing! - Direct ALL persons out of the danger zone - Read the instruction manual Confirm with ENTER	If the machine control unit is activated, components may move unexpectedly. • Follow the displayed instructions only if all risks have been eliminated.
33	Stop the discs and close the metering sliders	You may only switch to the System / Test menu area if the spreading operation has been deactivated. • Stop spreading discs. • Close the metering slide.
39	Manual mode active. Risk of fertiliser overflow.	The message is displayed on switching over from automatic to manual.
45	Error at M-EMC sensors. EMC control deactivated!	The sensor has stopped sending signals. • Cable breakage • Defective sensor
46	Spreading speed error. Observe spreading speed of 450..650 rpm!	The PTO speed is outside the range for the M EMC function.
47	Left dosing error, hopper empty, outflow blocked!	• Hopper empty • Outlet blocked
48	Right dosing error, hopper empty, outflow blocked!	• Hopper empty • Outlet blocked
49	Idle meas. implausible. EMC control deactivated!	• Defective sensor • Defective transmission
50	Idle meas. impossible. EMC control deactivated!	PTO speed not permanently stable
71	Impossible to reach disc speed	The spreading disc speed is not within the 5 % target range. • Problem with oil supply • Proportional valve spring is jammed.
72	Error at SpreadLight	Power supply is too high; the operating lights will be switched off.
73	Error at SpreadLight	Overload

No.	Message in display	Meaning and possible cause
74	Defect at SpreadLight	Connection error • Defective cable • Loose plug connector
75	Conveyor belt speed could not be reached	The conveyor belt has not reached the target speed within 5 s.
76	Error at left pre-metering slider cylinder	The position at the left pre-metering slide could not be reached. • Blockage • Hydraulics cylinder defective
77	Error at right pre-metering slider cylinder	The position at the right pre-metering slide could not be reached. • Blockage • Hydraulics cylinder defective
78	AXENT empty	The hopper is empty.
80	Stop loading!	The message is displayed on switching over to the system/test menu during operation. • Stop spreading operation. • Access the menu System / Test.
82	Type of machine modified. Spreading error possible. New configuration required!	The operating modes cannot be combined with certain machine types ▶ Restart the machine control unit after a change of type of machine. ▶ Implement machine settings. ▶ Load fertilizer chart for the machine type.
88	Error at disc speed sensor	The spreading disc RPM could not be determined • Cable breakage • Defective sensor
89	Disc speed too high	Alarm of the spreading disc sensor • The maximum RPM is reached. • The set RPM exceeds the maximum admissible value.

No.	Message in display	Meaning and possible cause
93	This disc type requires a modification on the TELIMAT device. Please follow the mounting instructions!	Spreading disc S1 is installed and the machine is equipped with TELIMAT. Spreading errors possible during border spreading • This spreading disc type requires conversion of the TELIMAT device.
110	Agitator overloaded Stop PTO!	Stop the PTO. Remove the clumps from the hopper.
111	Fault on LS valve	Power supply current is too high; the LS valve is switched off.
112	Fault on LS valve	Overload
113	Fault on LS valve	The LS valve has not be detected. • Cable breakage • LS valve defective

6.2 Fault/alarm

An alarm message is displayed with a red frame and with a warning symbol.

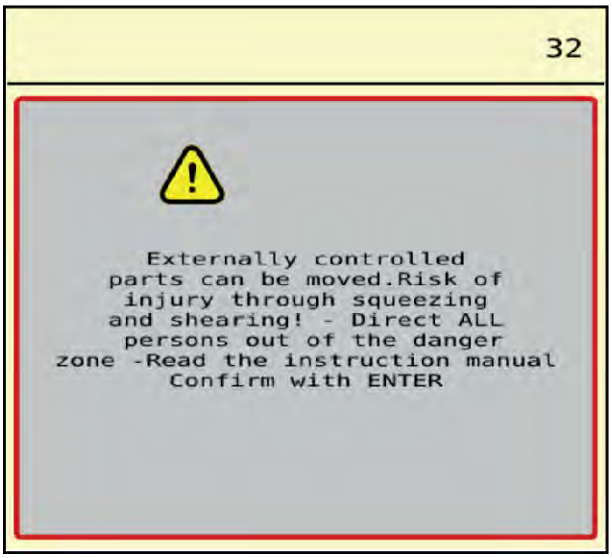


Fig. 49: Alarm message (example)

6.2.1 Acknowledging an alarm message

Acknowledging an alarm message:

▶ Rectify the cause of the alarm message.

Refer to the operator's manual for your mineral fertilizer spreader.
See also *6.1 Meaning of the alarm messages*.

▶ Acknowledge the alarm message by selecting the green check icon.

▶ Use various keys to acknowledge the other messages with a yellow frame:

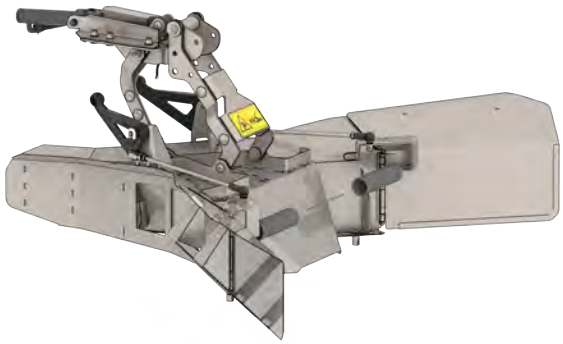
▷ Enter
▷ Start/Stop

▶ Follow the instructions on the screen.

The acknowledgment of alarm messages may differ on different ISOBUS terminals.

7 Special equipment

Illustration	Designation
	CCI A3 joystick
	WiFi module

Illustration	Designation
	GSE pro including a position sensor

8 Guarantee and warranty

RAUCH devices are manufactured using modern production methods and with the greatest of professional care, and are subjected to numerous inspections.

This is why RAUCH is offering a 12 month warranty if the following conditions are met:

- The warranty starts on the date of purchase.
- The warranty covers material or manufacturing defects. We are liable for third-party products (hydraulics, electronics) only to the extent of the relevant manufacturer During the warranty period, manufacturing and material defects will be rectified free of charge with the replacement or repair of the affected parts. Other rights extending beyond the above, such as claims for conversion, reduction, or replacement for reasons of damage not suffered by the supplied product are explicitly excluded. Warranty services are provided by authorized workshops, by RAUCH factory representatives or the factory itself.
- Consequences of natural wear, dirt, corrosion, and all defects caused by improper use as well as external influences shall be excluded from the warranty. Any unauthorized repairs or changes to the original condition will void the warranty. The warranty is voided if any spare parts other than genuine RAUCH spare parts were used. Therefore, the directions in the operating manual must be observed. Please contact our company representatives of the parent company if you have any questions or doubts. Warranty claims must be submitted to the company within 30 days at the latest after the damage has occurred. The date of purchase and the machine number must be indicated. If repairs under the warranty are required, they must be carried out by the authorized workshop only after consultation with RAUCH or the company's appointed representatives. The warranty period will not be extended by warranty work. Transport damage is not a factory defect and is therefore not covered by the manufacturer's warranty manufacturer.
- Claims for damage other than to the RAUCH devices will not be accepted. This also means that no liability will be accepted for damage resulting from spreading errors. Unauthorized modifications of the RAUCH devices may result in consequential damage, for which the manufacturer will not accept any liability. The manufacturer's exclusion from liability will not apply in the case of willful intent or gross negligence by the owner or a senior employee, and in cases where – according to the product liability law – there is liability for personal injury or material damage to privately used objects in the event of defects in the supplied product. The exclusion from liability will also not apply if characteristics are missing that are explicitly guaranteed, if the purpose of their guarantee was to protect the purchaser against damage not suffered by the supplied product itself.

RAUCH Streutabellen
RAUCH Fertilizer Chart
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Tabele wysiewu RAUCH
RAUCH Strooitabellen
RAUCH Tabella di spargimento
RAUCH Spredetabellen
RAUCH Levitystaulukot
RAUCH Spridningstabellen
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RAUCH

RAUCH Landmaschinenfabrik GmbH

Victoria Boulevard E 200
77836 Rheinmünster · Germany

info@rauch.de · www.rauch.de

Phone +49 (0) 7229/8580-0