

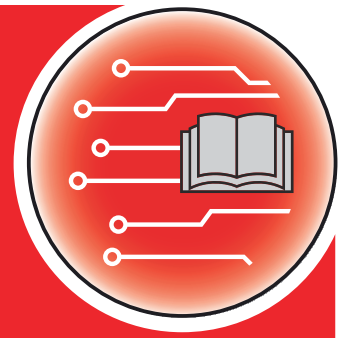
Complementary instructions



**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.



QUANTRON-A AXIS/MDS

Version $\geq$ 3.60.00

5902662-I-en-0726

Original instructions

Dear customer,

By purchasing the QUANTRON-A control unit for the AXIS and MDS 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 operator's 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 control unit.



Note the serial number of the control unit and of the machine

The control unit QUANTRON-A has been calibrated at the factory for the mineral fertilizer spreader with which it was supplied.. It cannot be connected to another machine without new calibration.

Please enter the serial number of the machine control unit and of the machine here. When connecting the machine control unit to the machine, these numbers must be checked.

- Serial number of control unit:
- Serial number and year of manufacture of the machine:

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

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1 User instructions

1.1 About this operator's manual

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

The manual contains important instructions for **safe, proper**, and economic **use** and **maintenance** of the 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 used (such as in the tractor).

The operator's manual does not replace **your own responsibility** as operator and operational staff of the 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 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 hierarchy and the path to the requested menu item are marked with an > (arrow) between menu and/or menu item(s):

- System / Test > Test/diagnosis > Voltage means that you can reach the Voltage menu item via the System / Test menu and the Test/diagnosis menu item.
 - The arrow > corresponds to confirmation with the **enter key**.

2 Layout and function

2.1 Overview of supported machines



Some models are not available in all countries.

■ MDS

Supported function

- Spreading depending on forward speed

MDS 8.2 Q/W	MDS 10.1 Q
MDS 14.2 Q/W	MDS 11.1 Q
MDS 18.2 Q/W	MDS 12.1 Q
MDS 20.2 Q/W	MDS 17.1 Q
	MDS 19.1 Q

■ AXIS-M V8

8 section steps

Function	AXIS-M 20 Q V8	AXIS-M 30 Q V8	AXIS-M 40 Q V8	AXIS-M 20 EMC V8	AXIS-M 30 EMC V8	AXIS-M 40 EMC V8	AXIS-M 30 EMC + W V8	AXIS-M 40 EMC + W V8
Spreading depending on forward speed	•	•	•	•	•	•	•	•
Mass flow control by measuring the torque of the spreading discs					•	•	•	•
Weigh cells							•	•

■ *AXIS-M VS pro*

Continuous section adjustment (VariSpread pro)

Function	AXIS-M 30 EMC VS pro	AXIS-M 40 EMC VS pro	AXIS-M 30 EMC W VS pro	AXIS-M 40 EMC W VS pro
Spreading depending on forward speed	•	•	•	•
Mass flow control by measuring the torque of the spreading discs	•	•	•	•
Weigh cells			•	•

2.2 Layout of the control unit

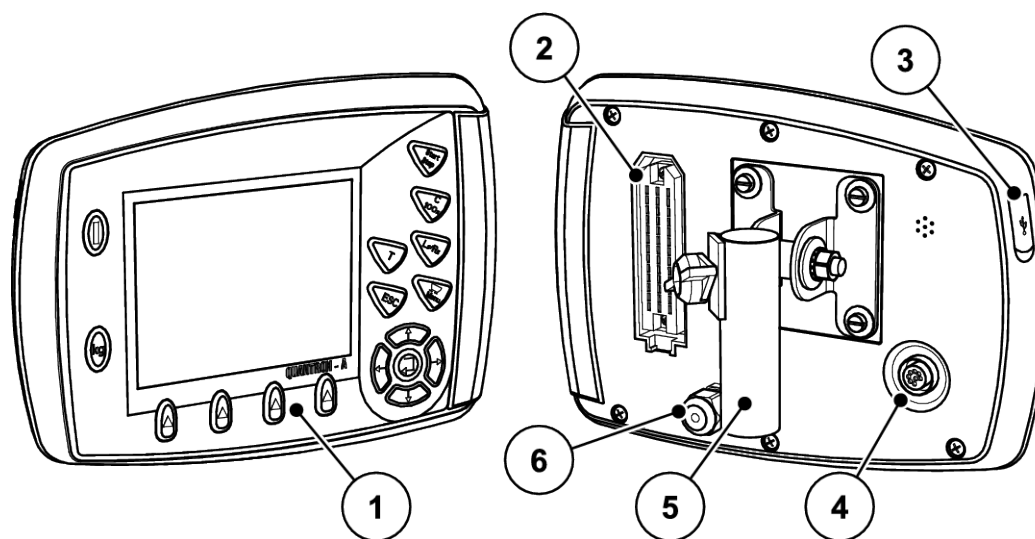


Fig. 1: Control unit QUANTRON-A

No.	Designation	Function
1	Control panel	Including membrane keys to operate the device and the display for working screens
2	Plug connector for connecting the machine cable	39-pin plug connector for connecting the machine cable
3	USB port with cover	For updating the PC. The cover serves as protection against dirt
4	V24 data port	Serial interface (RS232) with LH 5000 and ASD protocol, designed for connecting a Y-RS232 cable to a remote terminal. Plug connector (DIN 9684-1/ISO 11786) for connecting the 7-pin to 8-pin cable for the speed sensor.
5	Mounting bracket	Attachment of the control unit to the tractor
6	Power supply	3-pin plug connector conforming to DIN 9680 ISO 12369 for connecting the power supply

2.3 Control elements

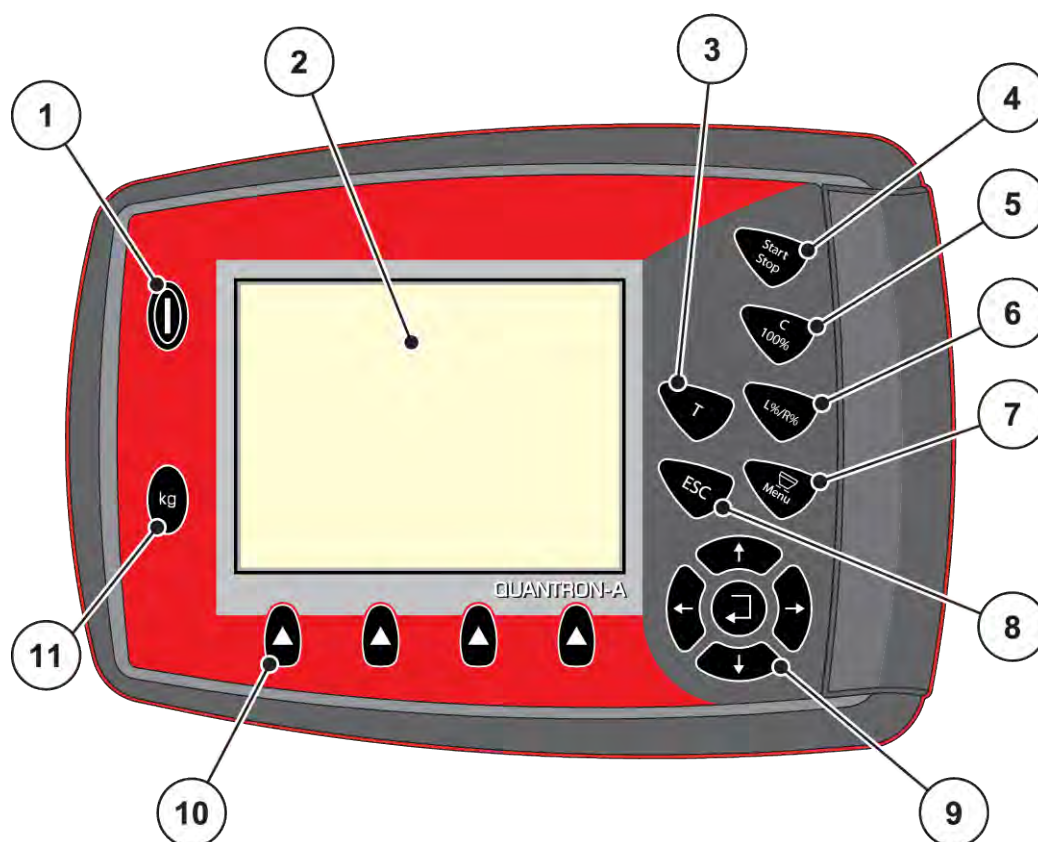


Fig. 2: Control panel at the front of the unit

No.	Designation	Function
1	ON/OFF	Switches the device on/off
2	Display	Display of working screens
3	T key (TELIMAT)	Key to display the TELIMAT settings
4	Start/Stop	Start/stop spreading
5	Clear/Reset	- Clearing an input in an input field, - Resetting the excess quantity to 100% - Acknowledgment of alarm messages

No.	Designation	Function
6	Section setting pre-selection	Toggle key for alternating between 4 states • Pre-selection of sections for changing the quantity, see 4.7.3 +/- quantity ○ L: Left ○ R: Right ○ L+R: Left + right • Section management (VariSpread function), see 2.4.3 Display of sections
7	Menu	Switch between working screen and main menu
8	ESC	Canceling entries and/or returning to the previous menu at the same time
9	Navigation field	Four arrow keys and one Enter key for navigation through menus and input fields • Arrow keys for moving the cursor on the display or for highlighting an input field • Enter key to confirm an input
10	Function keys F1 to F4	Selection of the functions next to the function keys on the display
11	Weighing/Trip count.	• Display of the remaining quantity in the hopper • Trip counter • kg left • Meter counter

2.4 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**.

2.4.1 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 4.10.2 - Display configuration - Page 78*

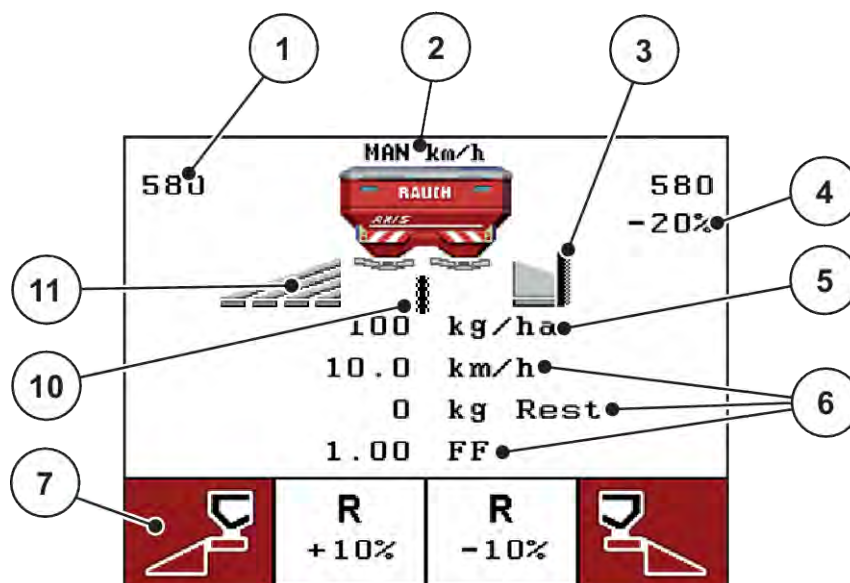


Fig. 3: Control unit display – example AXIS-M working screen

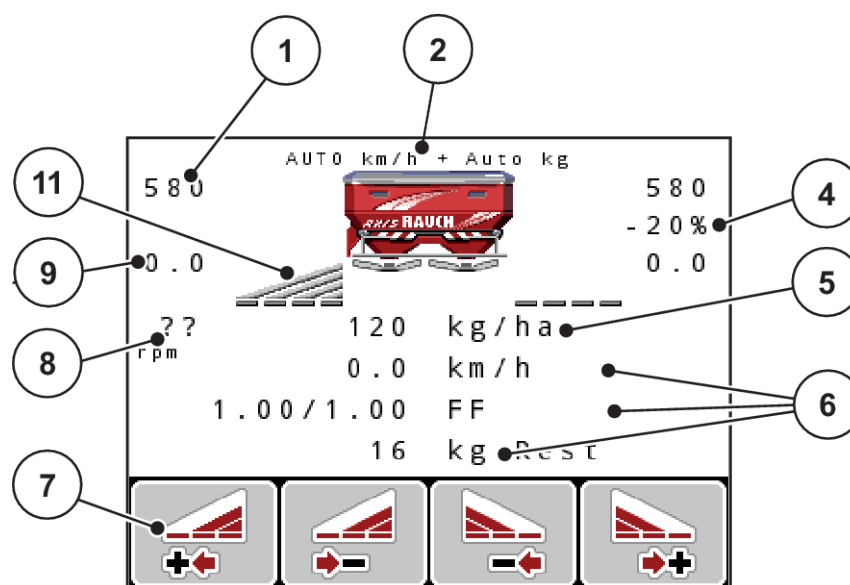


Fig. 4: Control unit display – example AXIS-M EMC operating screen

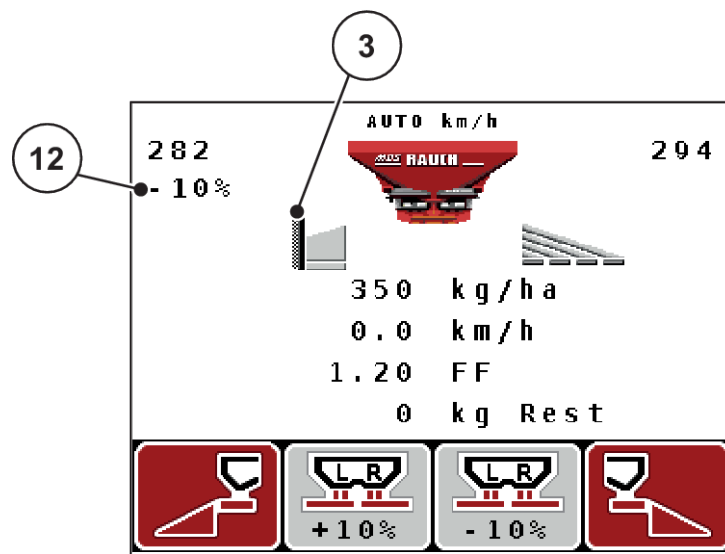


Fig. 5: Control unit display – example MDS operating screen

No.	Icon/display	Meaning (in the example shown)
1	Metering slide scale opening, left	Current opening position of the left metering slide
2	Operating mode	Shows the current operating mode
3	TELIMAT icon	On AXIS this icon appears on the right side, on MDS this icon appears on the left side. This icon appears when the TELIMAT sensors are installed and the TELIMAT function is enabled (factory setting) or the T-key is activated.
4	Right application rate adjustment	Application rate adjustment (+/-) in percent • Display of application rate adjustments • Range of values +/- 1..99 % possible
5	Application rate	Preset application rate
6	Display fields	Individually configurable display fields • Available assignment: see 4.10.2 Display configuration
7	Icon fields	Icon assignment to the fields depending on the menu • Selection of the function by means of the function keys shown below
8	PTO speed	Only EMC function: Current PTO speed • See 4.6.6 PTO speed
9	Drop point	Current position of the drop point

No.	Icon/display	Meaning (in the example shown)
10	Sensor brd.spread	AXIS only: This icon appears if the limited border spreading system is in the operating position and the function is enabled (factory setting)
11	Section left	Display of the left section status See 2.4.2 <i>Display of the metering slide status</i>
12	Left application rate adjustment	Application rate adjustment (+/-) in percent - Display of application rate adjustments - Range of values +/- 1..99 % possible

2.4.2 Display of the metering slide status

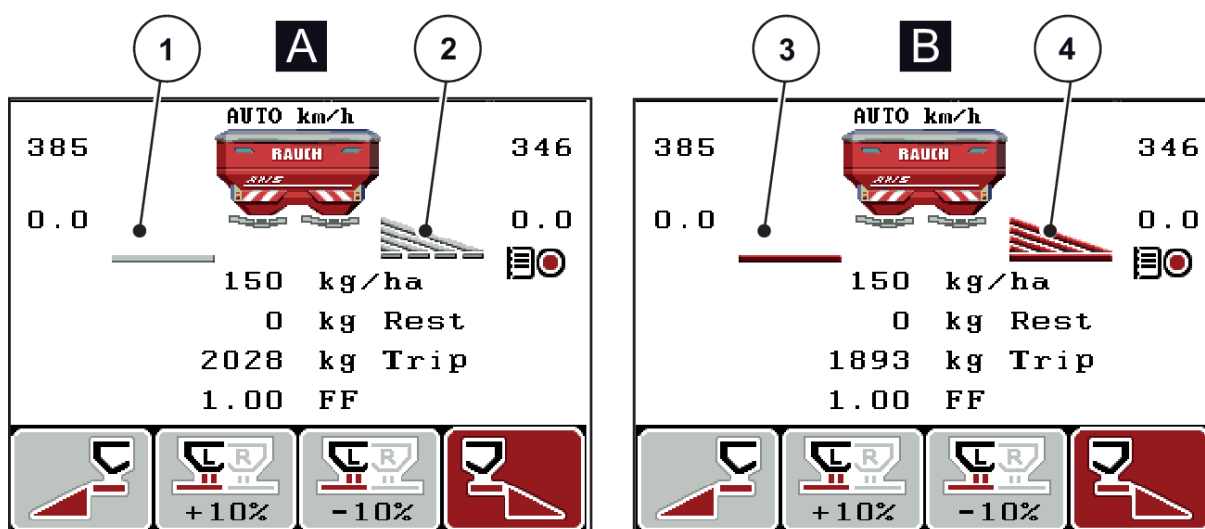


Fig. 6: Display of the AXIS metering slide status

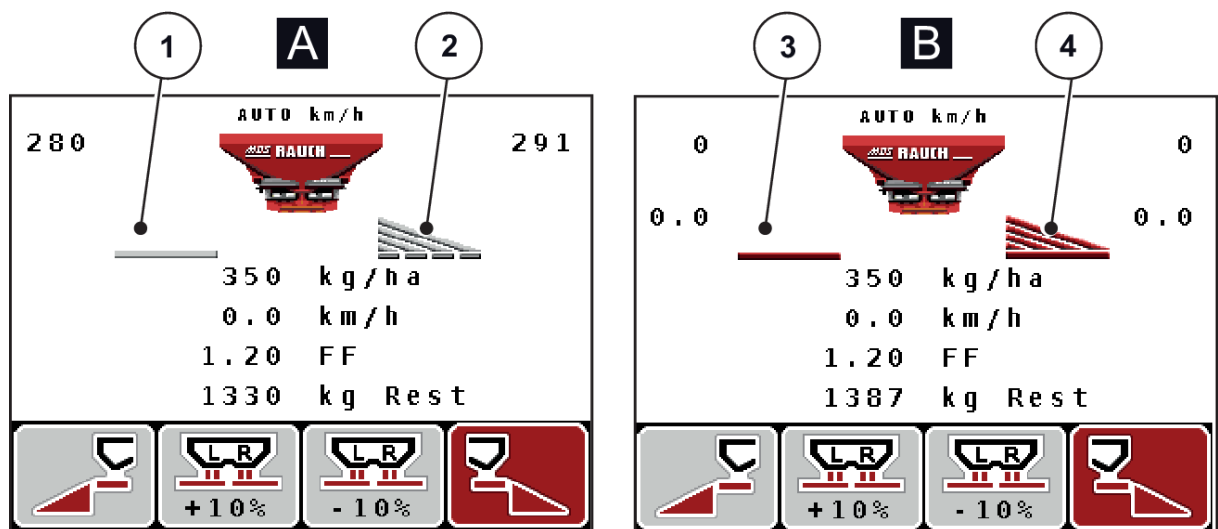


Fig. 7: Display of the MDS metering slide status

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

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

2.4.3 Display of sections

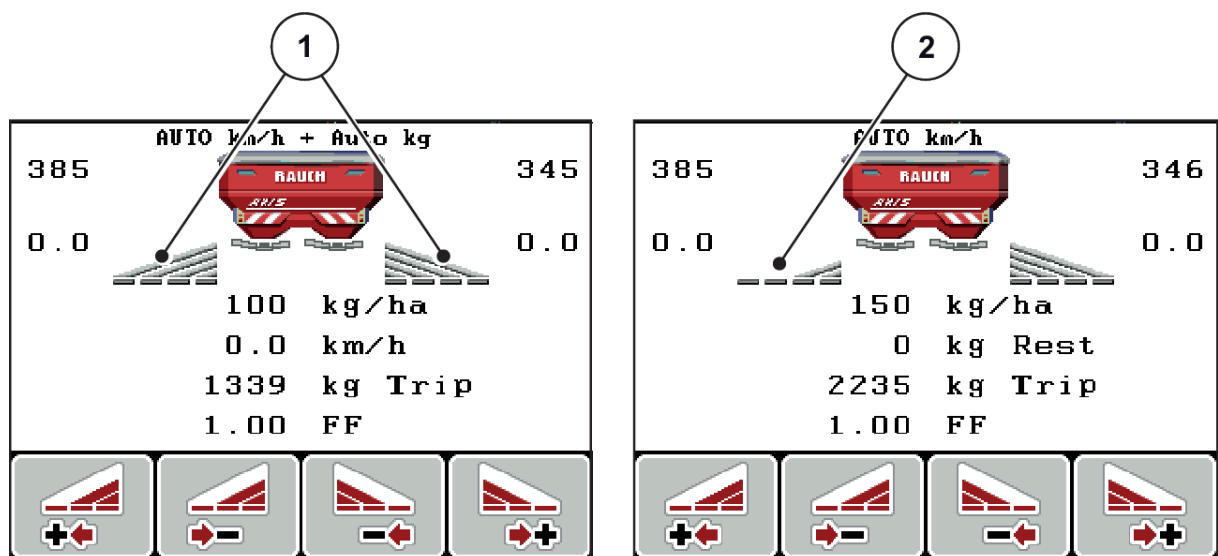


Fig. 8: Display of the section status (example with AXIS VariSpread 8)

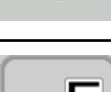
- [1] Activated sections with 4 possible spreading width steps
 [2] The left section is reduced by 2 section steps

Further display and setting options are explained in chapter 5.3 Working with sections.

2.5 Library of icons used

The control unit QUANTRON-A displays icons for the individual menus and functions on the screen.

2.5.1 Working screen icons

Icon	Meaning
	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)
	Left spreading side inactive
	Left spreading side active
	Right spreading side inactive

Icon	Meaning
	Right spreading side active
	Reduce section, right (minus) In boundary spreading mode: Pressing and holding (> 500 ms) immediately deactivates an entire spreading side.
	Increase right section (plus)
	The minimum mass flow is undercut

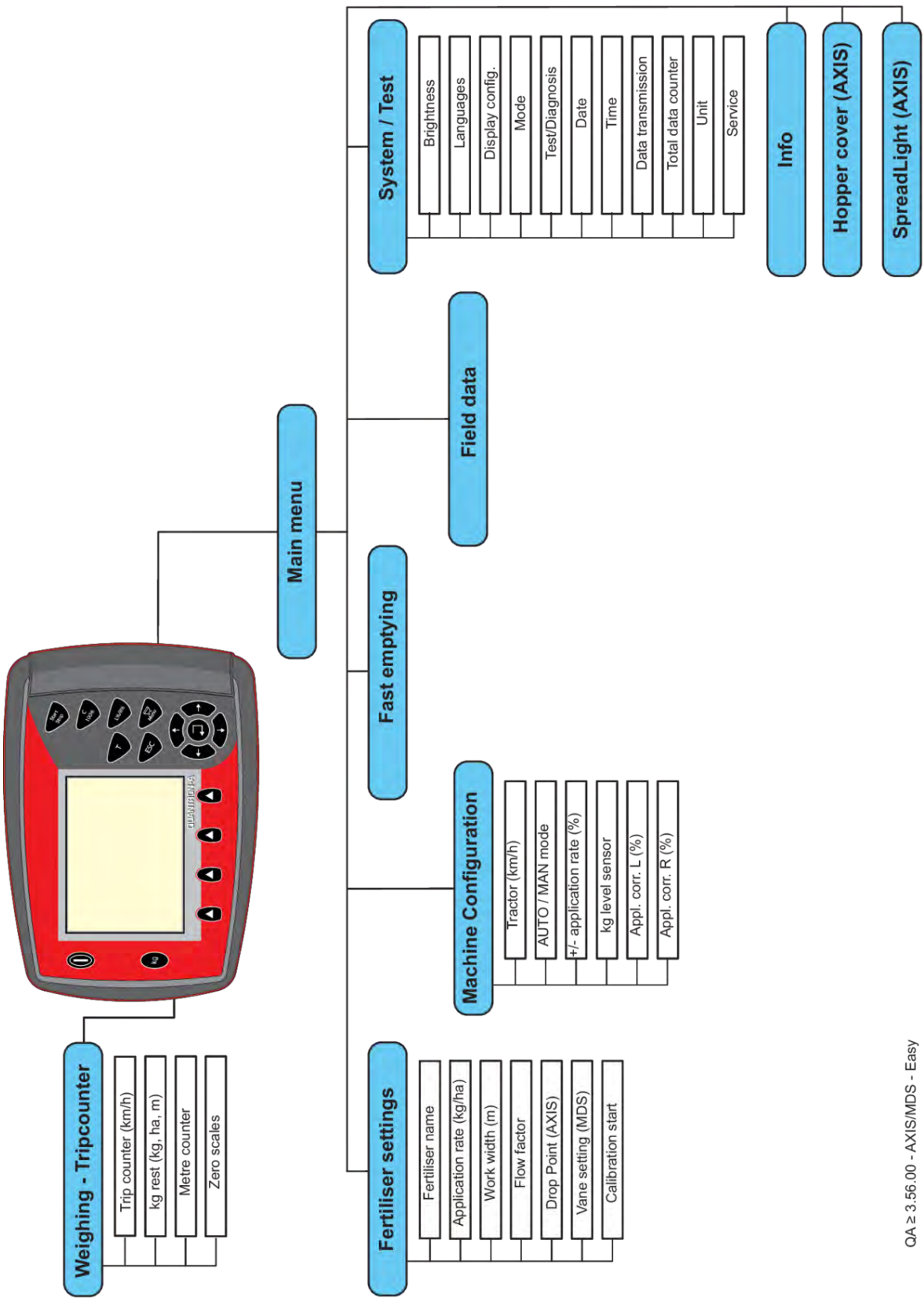
2.6 Structural menu overview



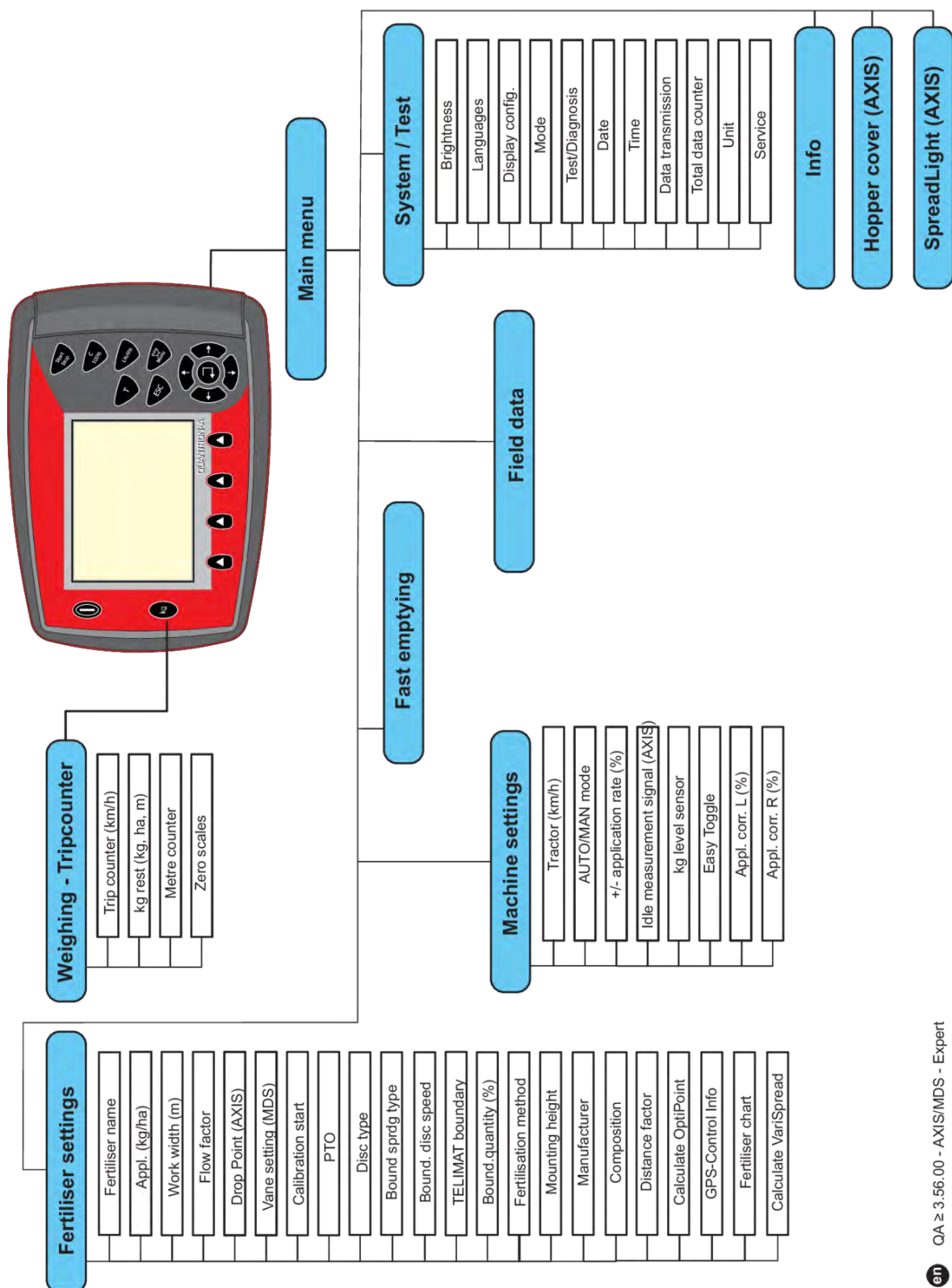
The Easy/Expertmode is adjusted in the System / Test menu.

■ Easy Mode

■ Expert Mode



en
QA ≥ 3.56.00 - AXIS/MDS - Easy



en QA ≥ 3.56.00 - AXIS/MDS - Expert

2.7 WIFI module

Using the WLAN module (special equipment) and the RAUCH app on a smart phone, the fertilizer charts can be wirelessly downloaded directly to the control unit. In the case of variant W, the weight can also be loaded.

Do this in accordance with the user manual for the WLAN module. A sticker with the QR code is affixed to the machine.

The WLAN password is **quantron**

3 Attachment and installation

3.1 Tractor requirements

Before installing the machine control unit, check 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 must be **540 rpm** as a minimum requirement and must be complied with (basic requirement for a correct working width).



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 **540 rpm**.

- A 7-pin socket (DIN 9684-1/ISO 11786). This is the socket by which the control unit receives the pulse for the current forward speed.



The 7-pin socket for the tractor and the forward speed sensor can be obtained as an expansion kit (option), see chapter 7 *Special equipment*

3.2 Connections, sockets

3.2.1 Power supply

The tractor supplies the machine control with power via the 3-pin connector (DIN 9680/ISO 12369).

- [1] PIN 1: is not required
- [2] PIN 2: (15/30): +12 V
- [3] PIN 3: (31): Ground

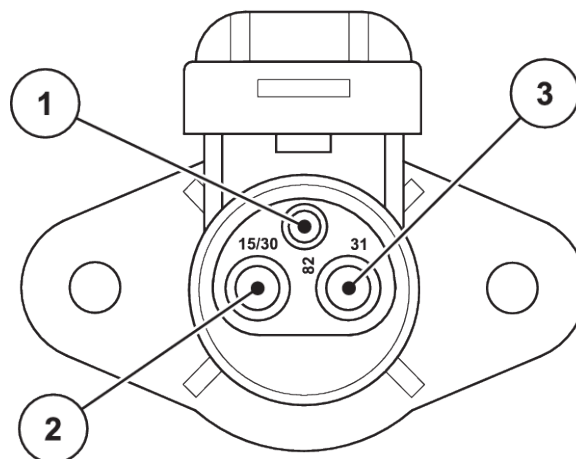


Fig. 9: PIN assignment of power socket

3.2.2 Forward speed signal

The control unit receives the pulses for the current forward speed via the 7-pin plug connector (DIN 9684-1/ISO 11786). For this purpose, the 7-pin to 8-pin cable (accessory) is connected to the forward speed sensor at the plug connector.

- [1] PIN 1: actual forward speed (radar)
 [2] PIN 2: theoretical forward speed (e.g. gearbox, wheel sensor)

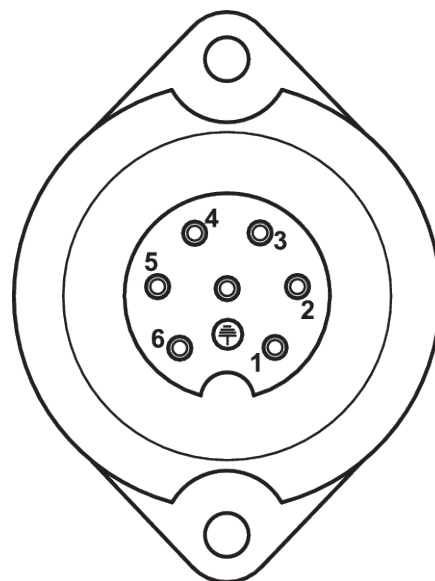


Fig. 10: PIN assignment of the 7-pin plug connector

3.3 Connect control unit



Every time the QUANTRON-A control unit is switched on, the current software version. is briefly displayed.



Note the machine number

The QUANTRON-A control unit is factory-calibrated for the fertilizer spreader with which it has been delivered.

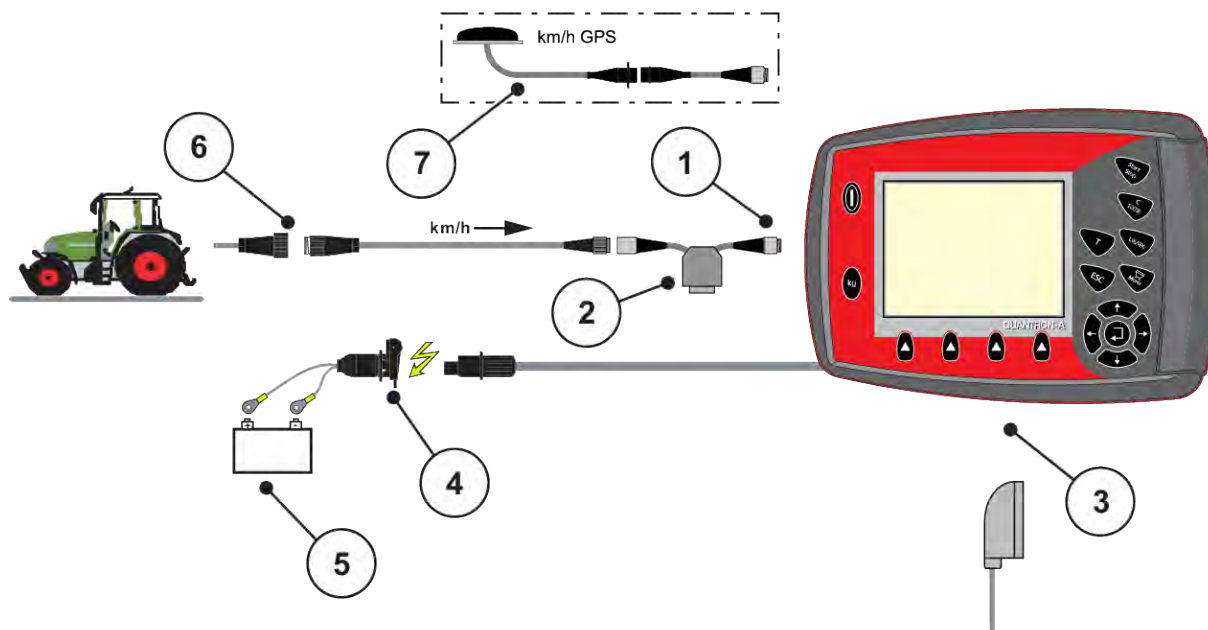
Connect the control unit to the correct fertilizer spreader only.

Proceed in the following order:

- ▶ Select a suitable position in the tractor cabin (within the driver's field of vision) to secure the control unit.
- ▶ Secure the control unit by means of the mounting bracket in the tractor cabin.
- ▶ Connect the control unit to the 7-pin socket or to the forward speed sensor (depending on the equipment).
- ▶ Connect the control unit to the actuators of the machine using the 39-pin machine cable.
- ▶ Connect the control unit to the tractor's power supply using the 3-pin plug connector.

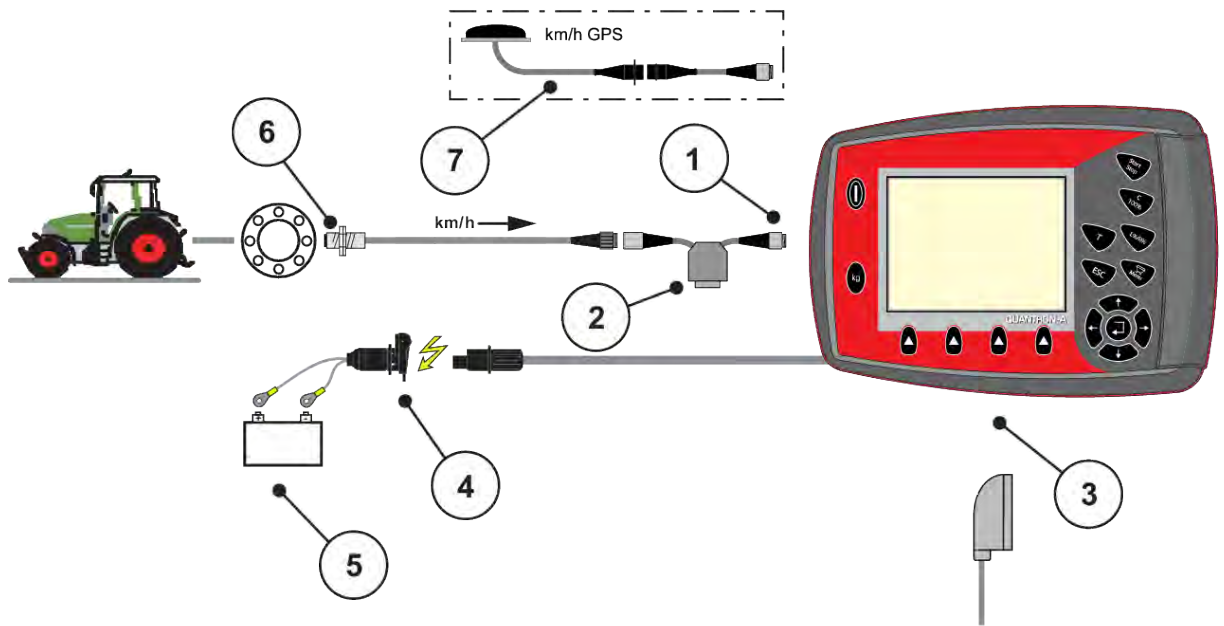
3.3.1 Overview of connections to tractor

■ *Standard*



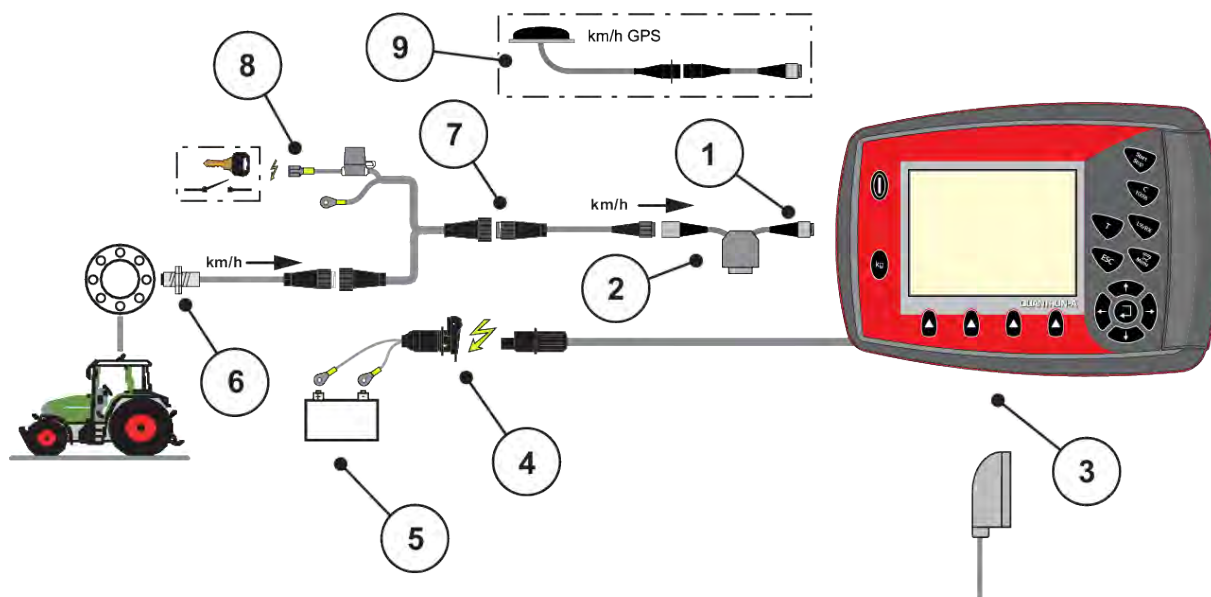
- | | |
|--|---|
| [1] Serial interface RS232, 8-pin plug connector | [5] Battery |
| [2] Option: Y-cable (V24 RS232 interface for storage medium) | [6] 3-pin plug connector conforming to DIN 9680/ISO 12369 |
| [3] Connection for 39-pin machine plug (rear) | [7] Option: GPS cable and receiver |
| [4] 7-pin plug connector conforming to DIN 9684/ISO 11786 | |

■ Wheel sensor



- | | |
|--|------------------------------------|
| [1] Serial interface RS232, 8-pin plug connector | [5] Battery |
| [2] Option: Y-cable (V24 RS232 interface for storage medium) | [6] Forward speed sensor |
| [3] Connection for 39-pin machine plug (rear) | [7] Option: GPS cable and receiver |
| [4] 3-pin plug connector conforming to DIN 9680/ISO 12369 | |

■ **power supply via ignition lock**



- | | |
|--|---|
| [1] Serial interface RS232, 8-pin plug connector | [6] Forward speed sensor |
| [2] Option: Y-cable (V24 RS232 interface for storage medium) | [7] 7-pin plug connector conforming to DIN 9684/ISO 11786 |
| [3] Connection for 39-pin machine plug (rear) | [8] Option: QUANTRON-A electricity supply via ignition switch |
| [4] 3-pin plug connector conforming to DIN 9680/ISO 12369 | [9] Option: GPS cable and receiver |
| [5] Battery | |

3.3.2 Overview of connections to machine

■ MDS

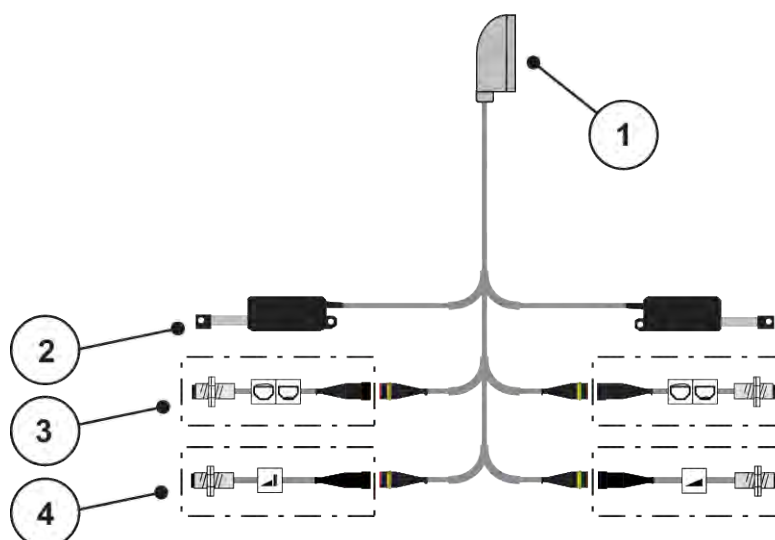


Fig. 11: Schematic connection diagram of QUANTRON-A – MDS

- | | |
|---|---|
| [1] 39-pin machine plug | [3] Option (level sensor, left/right) |
| [2] Metering slide actuator, left/right | [4] Option (TELIMAT sensor, top/bottom) |

■ **AXIS-M variant Q**

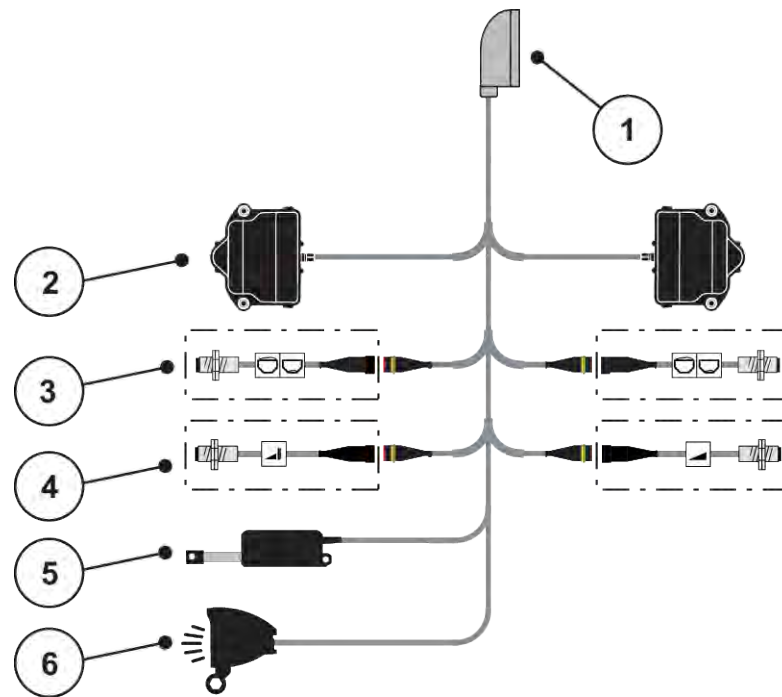


Fig. 12: Schematic connection diagram of QUANTRON-A – AXIS-M variant Q

- | | |
|---|-------------------------|
| [1] 39-pin machine plug | [5] Hopper cover |
| [2] Metering slide rotary drive, left/right | [6] Option: SpreadLight |
| [3] Option (level sensor, left/right) | |
| [4] Option TELIMAT sensor and/or GSE sensor, top/bottom | |

■ **AXIS-M EMC – VariSpread V8**

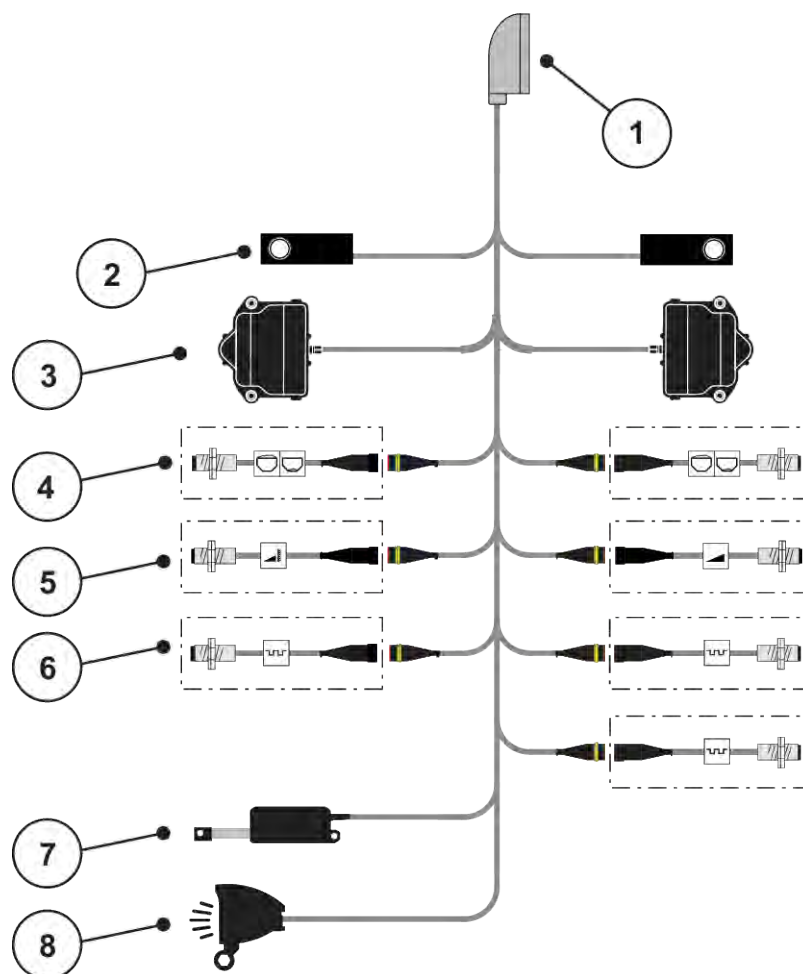


Fig. 13: Schematic connection diagram of QUANTRON-A – AXIS-M EMC V8

- | | |
|---|--|
| [1] 39-pin machine plug | [5] Option: TELIMAT sensor and/or GSE sensor, top/bottom |
| [2] Weigh cell, left/right (machines with weigh frame only) | [6] M EMC sensors (left, right, center) |
| [3] Metering slide rotary drive, left/right | [7] Hopper cover |
| [4] Option: Level sensor, left/right | [8] Option: SpreadLight |

■ **AXIS-M EMC – VariSpread VS pro**

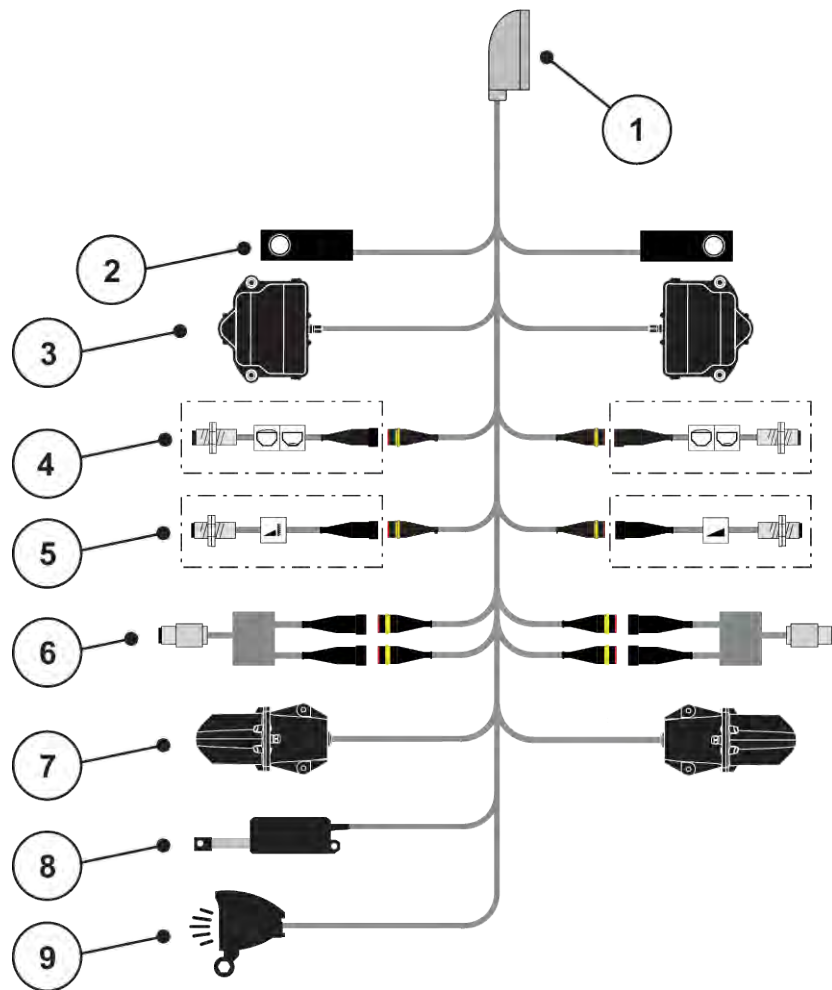


Fig. 14: Schematic connection diagram of QUANTRON-A – AXIS-M EMC VS pro

- | | |
|---|---------------------------------------|
| [1] 39-pin machine plug | [6] Torque/speed sensor, left/right |
| [2] Weigh cell, left/right (machines with weigh frame only) | [7] Drop point adjustment, left/right |
| [3] Metering slide rotary drive, left/right | [8] Hopper cover |
| [4] Option: Level sensor, left/right | [9] Option: SpreadLight |
| [5] Option: TELIMAT sensor and/or GSE sensor, top/bottom | |

3.4 Metering slide preparation

Mineral fertilizer spreaders AXIS-M Q, AXIS-M EMC, and MDS Q are fitted with an electric slide actuator for setting the application rate.

NOTICE!

Observe the position of the metering slides of the AXIS fertilizer spreader

Operation of the actuators by the control unit QUANTRON-A can cause damage to the metering slides of the machine if the stop levers are incorrectly positioned.

- Always clamp the stop levers at the maximum scale position.

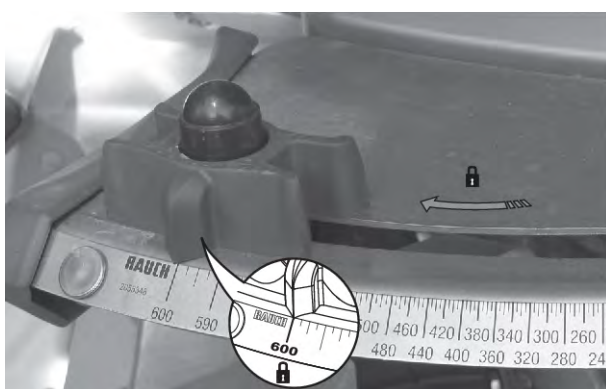


Fig. 15: AXIS metering slide preparation (example)



Refer to the operator's manual for your mineral fertilizer spreader.

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.



Only AXIS-M EMC (+W)

The settings of each menu are very important for optimal **mass flow control (EMC function)**.

Take particular note of the specifics of the EMC function for the following menu items:

- In the Fertiliser settings menu
 - Spreading disc; see 4.6.7 *Disc type*
 - PTO; see 4.6.6 *PTO speed*
- In the Machine settings menu
 - AUTO/MAN mode; see 4.7.2 *AUTO/MAN mode* and chapter 5

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 3.3 *Connect control unit*.
- The minimum voltage of **11 V** is guaranteed.



- ▶ Press the **ON/OFF** switch [1].

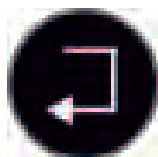
*After a few seconds, the **start-up screen** of the control unit is displayed.*

*Shortly after, the control unit will display the **activation menu** for a few seconds.*

- ▶ Press the **Enter key**.

The start diagnosis will be displayed for a few seconds.

The working screen then appears.



[1] ON/OFF switch



Fig. 16: Switching on the control unit

4.2 Navigation within the menus



Refer to section 1.3.3 *Menu hierarchy, keys and navigation* for important notes regarding the display and navigation between menus.



Accessing the main menu

- ▶ Press the Menu key. See 2.3 *Control elements*

The main menu is displayed.

The black bar indicates the first sub-menu.



Not all parameters are displayed simultaneously in one menu window. The **arrow keys** enable switching to the next or adjoining window.



Accessing a sub-menu

- ▶ Move the bar up and down with the arrow keys.
- ▶ Highlight the desired sub-menu with the bar on the display.
- ▶ Call up the highlighted sub-menu by pressing the Enter key.



Windows appear which prompt various actions.

- Text input
- Value input
- Settings made in further sub-menus

Exiting menus

- ▶ Confirm settings by pressing the **Enter key**.

The display reverts to the preceding menu.

Or



- ▶ Press ESC.

The previous settings are retained.

The display reverts to the preceding menu.

Or

- ▶ Press the Menu key.

The display reverts to the working screen.

Press the Menu key again to revert to the preceding menu.

4.3 Weighing/Trip counter

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



- Press the kg key on the control unit.

The *Weighing/Trip Counter - Weighing/Trip count.* menu appears.

weighing/Trip count.
Trip counter
Rest (kg, ha, m)
Meter counter
Zero scales

Fig. 17: Menu Weighing/Trip count.

Sub-menu	Meaning	Description
Trip counter Trip counter	Display of the fertilizer quantity spread, area spread, and spread distance	4.3.1 Trip counter
Rest (kg, ha, m) Rest (kg, ha, m)	Display of the quantity remaining in the machine hopper	4.3.2 Display rest quantity
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	Only with weigh cells (W): Weighing value for empty scales is set to "0 kg"	4.3.3 Zero scales

4.3.1 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.





Delete trip counter

- Select the sub-menu Weighing/Trip count.
> Trip counter.

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

The Delete trip counter field is highlighted.

- Press the **Enter** key.

All values of the trip counter are reset to 0.

- Press the **kg** key.

The display reverts to the working screen.

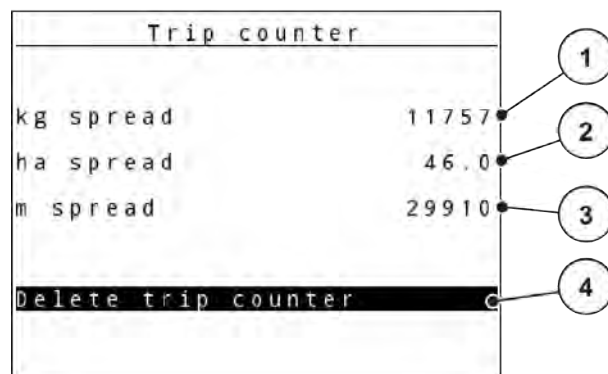


Fig. 18: Trip counter menu

- | | |
|---|---|
| [1] Display of spread quantity since the last reset | [3] Display of spread distance since the last reset |
| [2] Display of spread area since the last reset | [4] Delete trip counter: all values to 0 |

■ Checking the trip counter during spreading

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 chapter 4.10.2 *Display configuration*

4.3.2 Display rest quantity

In the kg left menu, the quantity remaining in the hopper can be interrogated.

The menu indicates the possible area (ha) and distance (m) which can still be spread with the remaining fertilizer quantity.

Both displays are calculated based on the following values:

- Fertiliser settings
- Input in the remaining quantity input field
- Application rate
- Working width

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

The Remainder menu appears.



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 remaining quantity from the last spreading process is displayed.

- Fill the hopper.
- In the kg field, enter the new total weight of the fertilizer in the hopper.

- Press the **Enter** key

The unit calculates the values for the possible spread area and distance.

- Press the **kg** key.

The display reverts to the working screen.

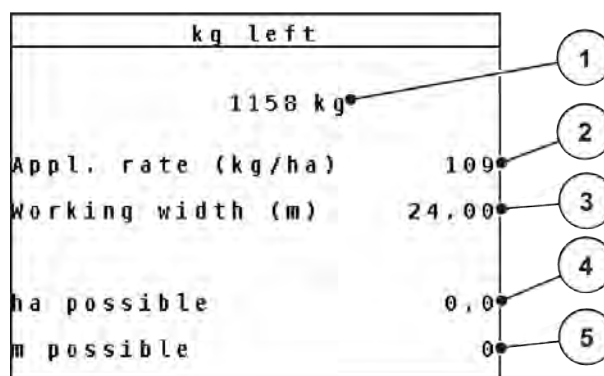


Fig. 19: Menu kg left

- | | |
|--|--|
| [1] Remaining quantity input field | [4] Display of the area that can be spread |
| [2] Application rate, display field from Fertiliser settings | [5] Display of the distance that can be spread |
| [3] Working width, display field from Fertiliser settings | |

■ Requesting the remaining quantity during spreading



During spreading, the remaining quantity is continuously recalculated and displayed.

Refer to Chapter 5 Spreading operation

4.3.3

Zero scales

■ Only for AXIS and MDS units with weigh cells

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 in a horizontal position and off the ground,
- The tractor is at a standstill.

Zero scales:

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

► Press the **Enter key**.



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

The Weighing trip counter menu is displayed.



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

4.3.4 Weigh quantity

In this menu, the quantity remaining in the hopper is weighed and the parameters for the flow factor control are set.

- [1] Display of spreader forward speed
- [2] Quantity weighed from the hopper
- [3] Filling options
- [4] Weigh remaining quantity (only displayed during AUTO km/h + Stat. kg mode)
- [5] Cancel

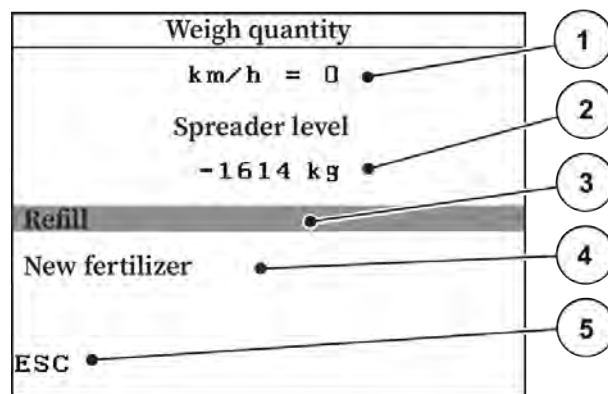


Fig. 20: Weighing the quantity menu



The Weigh quantity function can be performed only when the machine is at a standstill and in a horizontal position.

The menu shows the remaining quantity in the hopper. It depends on the following values:

- Weighing the quantity menu item
- Taring the quantity menu item



The Weighing the quantity function only becomes active while the system is in AUTO km/h + AUTO kg or AUTO km/h + Stat. kg mode. Upon delivery of the control unit with the AXIS-M W broadcast mineral fertilizer spreader, the AUTO km/h + AUTO kg mode is set by the factory.

When weighing the quantity, the following requirements have to be fulfilled:

- The machine is at a standstill.
- The PTO shaft is switched off.
- The machine is in a horizontal position and off the ground.
- The tractor is at a standstill.
- the QUANTRON-A control unit is switched on.

Weigh the remaining quantity in the hopper:

- ▶ Fill the hopper.
 - ▷ A window appears in the display that shows the remaining quantity. (from a filling of 150 kg)
- ▶ Mark the type of filling that has been carried out on the display:
 - ▷ **Refilling:** Continue spreading with the same fertilizer.
 - ▷ **New fertilizer:** The flow factor is set to 1.0 and a new flow factor control is activated.
 When filling for the first time with a new type of fertilizer, acknowledge the weighing window with **new fertilizer**.
 - ▷ **ESC:** Cancel
- ▶ Mark the selection and press the Enter key.

The working screen appears on the display. The weighed remaining quantity can be shown in the display field.

4.4 Main menu

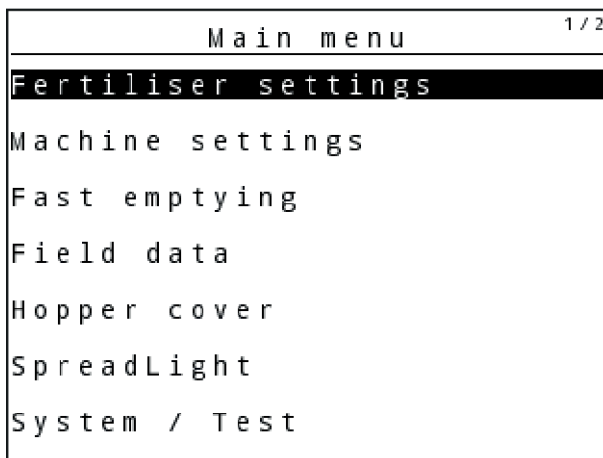


Fig. 21: Main menu - Main menu

Sub-menu	Meaning	Description
Fertiliser settings Fertiliser settings	Fertilizer and spreading operation settings	<i>4.5 Fertiliser settings in Easy-Mode</i>
Machine settings Machine settings	Tractor and machine settings	<i>4.7 Machine settings</i>
Fast emptying Fast emptying	Direct access to menu for fast emptying of the machine	<i>4.8 Fast emptying</i>
Field data Field data	Opens the menus for selecting, creating, or deleting field data	<i>4.9 Field data</i>
Hopper cover Hopper cover	Opening/closing the hopper cover	<i>4.13 Hopper cover</i>
SpreadLight	Activation/deactivation of operating lights	<i>4.12 Operating lights (SpreadLight)</i>
System/Test System / Test	Settings and diagnosis of the machine control unit	<i>4.10 System/Test</i>
Info Info	Machine configuration display	<i>4.11 Info</i>

4.5 Fertiliser settings in Easy-Mode

The Mode setting is described under *4.10.3 Setting the mode*.

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

- Call up the Main menu > Fertiliser settings menu.



In the **M EMC** function, the mode is automatically set to expert.

Fertiliser settings		1 / 4
8.ABC.....		
Appl. rate (kg/ha)	100	
Working width (m)	36.00	
Flow factor	1.00	
Drop point	0.0	
Start calibration		

Fig. 22: Fertiliser settings menu - Fertiliser settings for AXIS, Easy mode

Fertiliser settings		
1.ABC		
Appl. rate (kg/ha)	100	
Working width (m)	18.00	
Flow factor	1.00	
Vane setting	-----	
Start calibration		

Fig. 23: Fertiliser settings menu - Fertiliser settings for MDS, Easy mode

Sub-menu	Meaning	Description
Fertiliser name Fertiliser name	Fertilizer selected from the fertilizer chart	4.6.11 Fertilizer charts
Application rate Appl. rate (kg/ha)	Inputting the set application rate in kg/ha	4.6.1 Application rate
Working width Working width (m)	Determination of the working width to be spread	4.6.2 Setting the working width
Flow factor Flow factor	Input of flow factor of the fertilizer used	4.6.3 Flow factor
Drop point Drop point	Input of the drop point For AXIS with electrical drop point actuators : Drop point adjustment	Refer to the operator's manual of the machine. 4.6.4 Drop point

Sub-menu	Meaning	Description
Only for MDS Disc vane settings Vane setting	Input of vane settings. The display is only for information purposes	Refer to the operator's manual of the machine.
Start calibration Start calibration	Accessing the sub-menu for executing the calibration Not available in EMC mode	4.6.5 Calibration test

4.6 Fertiliser settings in Expert-Mode

The Mode setting is described under 4.10.3 Setting the mode.

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

- Call up the Main menu > Fertiliser settings menu.



In the **M EMC** function, the mode is automatically set to expert.



Only for AXIS

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

Fertiliser settings 1/4	Fertiliser settings 2/4
8.ABC.....	PTO 540
Appl. rate (kg/ha) 100	Spreading disc 54
Working width (m) 36.00	Bound. sprd.type Limited bd
Flow factor 1.00	Bound. disc speed 0
Drop point 0.0	TELIMAT Limited bd 000
Start calibration	Grenzstr.Menge (%) - 0
	Fertilisation Normal

Fig. 24: Fertiliser settings menu - Fertiliser settings for AXIS, Expert mode

Fertiliser settings	1/3	Fertiliser settings	2/3
1.ABC		PTO	540
Appl. rate (kg/ha)	100	Spreading disc	M1
Working width (m)	18.00	Bound. sprd.type	Limited bd
Flow factor	1.00	Bound. disc speed	0
Vane setting	----	TELIMAT	Limited bd
		Grenzstr.Menge (%)	- 0
Start calibration		Fertilisation	Normal

Fig. 25: Fertiliser settings menu - Fertiliser settings for MDS, Expertmode

Fertiliser settings	3/3	Fertiliser settings	4/4
Mounting height	50/50	Calculate VariSpread	
-----		Width	drp.pt.
-----		8.00	0.0
Aerodynamic factor	100	06.00	0.0
Calculate OptiPoint		04.00	0.0
GPS Control Info		02.00	0.0
Fertiliser chart		0.00	0.0

Fig. 26: Fertiliser settings menu - Fertiliser settings for AXIS/MDS, tab 3/4

Sub-menu	Meaning	Description
Fertiliser name Fertiliser name	Fertilizer selected from the fertilizer chart	4.6.11 Fertilizer charts
Application rate Appl. rate (kg/ha)	Inputting the set application rate in kg/ha	4.6.1 Application rate
Working width Working width (m)	Determination of the working width to be spread	4.6.2 Setting the working width
Flow factor Flow factor	Input of flow factor of the fertilizer used	4.6.3 Flow factor
Drop point Drop point	Input of the drop point For AXIS with electrical drop point actuators : Drop point adjustment	Refer to the operator's manual of the machine. 4.6.4 Drop point
Only for MDS Disc vane settings Vane setting	Input of vane settings. The display is only for information purposes	Refer to the operator's manual of the machine.

Sub-menu	Meaning	Description
Start calibration Start calibration	Accessing the sub-menu for executing the calibration Not available in EMC mode	4.6.5 <i>Calibration test</i>
PTO PTO	AXIS-M Influences the EMC mass flow control Factory setting: • AXIS-M 20.2/30.2: 540 rpm • AXIS-M 50.2: 750 rpm	4.6.6 <i>PTO speed</i>
Spreading disc Spreading disc	Setting of the spreading disc type mounted on the mineral fertilizer spreader Influences the EMC mass flow control Selection list: • S1 • S2 (disallowed with EMC) • S4 • S6 • S8	4.6.7 <i>Disc type</i>
Spreading disc Spreading disc	Setting of the spreading disc type mounted on the mineral fertilizer spreader Selection list: • M1C • M1XC • M2 (only for MDS.2)	Selection with arrow keys, confirmation with the Enter key
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
TELIMAT Full bord./ Limited bd	Saving the TELIMAT settings for border spreading	The setting must always be performed mechanically Only for machines with a TELIMAT sensor (checks only the top/bottom end positions)
Boundary quantity Limit. bd rate (%)	Pre-setting the application rate reduction in border spreading mode	To be entered in a separate input window

Sub-menu	Meaning	Description
Fertilisation method Fertilisation method	Selection list: • Normal • Late sprd.	Selection with the arrow keys Confirmation with the Enter key
Mounting height Mounting height	Indicated in cm front/cm rear Selection list: • 0/6 • 40/40 • 50/50 • 60/60 • 70/70 • 70/76	
Manufacturer Manufacturer	Fertilizer manufacturer input	
Composition Composition	Percentage of the chemical composition	
Distance factor Distance factor	Input of the distance factor from the fertilizer chart. Required for OptiPoint calculation	
Calculate OptiPoint Calculate OptiPoint	Input of the GPS control parameters	<i>4.6.9 Calculate OptiPoint</i>
GPS Control Info GPS-Control info	Display of information of the GPS Control parameters	<i>4.6.10 GPS Control info</i>
Fertiliser chart Fertiliser chart	Management of fertilizer charts	<i>4.6.11 Fertilizer charts</i>
Calculate VariSpread Calculate VariSpread	Calculation of values for adjustable sections	<i>4.6.12 Calculate VariSpread</i>

4.6.1 Application rate

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

- 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. See 4.14.2 *Entering values*
- Press the **Enter key**.
The new value is saved in the machine control unit.

4.6.2 Setting the working width

The working width (in meters) 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 the **Enter key**.

The new value is saved in the control unit.

4.6.3 Flow factor

The flow factor lies within the range of **0.2** to **1.9**. With identical basic settings (driving speed, working width, application rate), 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 flow 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 Manual selection box.



Via the Start calibration menu, the flow factor can be determined and entered using the control unit. See 4.6.5 *Calibration test*

The M EMC function determines the flow factor specifically for each spreading side. Therefore, a manual input is no longer necessary.



The flow factor calculation depends on the operating mode used. For further information about the flow factor, see 4.7.2 *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 and MAN km/h, we highly recommend executing a **calibration** in order to be able to accurately determine the flow factor for this fertilizer.

- ▶ Press the **Enter** key.

The new value is saved in the control unit.

**AXIS-M EMC (+W)**

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 4.10.2 *Display configuration* and 4.7.2 *AUTO/MAN mode*

Minimum factor

The machine control unit automatically sets the minimum factor to one of the following values, depending on the entered value:

- The minimum factor is 0.2 if the entered value is less than 0.5
- The minimum factor is 0.4 if the entered value is greater than 0.5.

■ **Display of flow factor with M EMC function (AXIS only)**

Enter a value for the flow factor in the Flow factor sub-menu as a standard value. However, during spreading with the M EMC function activated, the control unit controls the left and the right metering slide openings separately. Both values are displayed in the working screen.



When the Start/Stop key is pressed, the display updates the indicated flow factor with a slight delay. Subsequently, the display is updated in regular intervals.

- [1] Flow factor for the right metering slide opening
- [2] Flow factor for the left metering slide opening

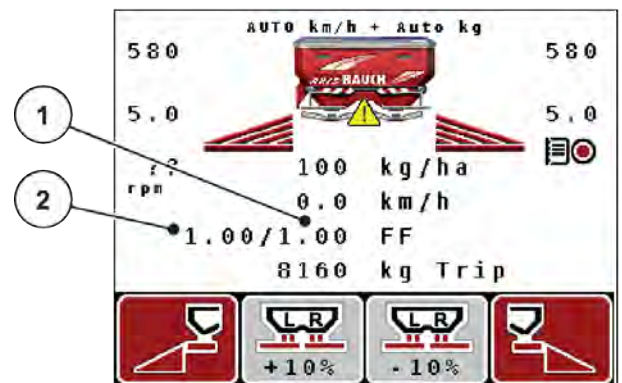


Fig. 27: Separate control of the left and right flow factor (M EMC function activated)

4.6.4 Drop point

■ AXIS-M Q V8



Entering the drop point for **Q variant** machines is merely informative and does not affect the settings of the fertilizer spreader.

In this menu, you can enter the drop point for information purposes.

- 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 the **Enter key**.

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

■ AXIS-M VS pro

With the AXIS-M VS pro mineral fertilizer spreader, the drop point is set using exclusively the electrical drop point adjustment.

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

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

If the drop point is blocked, alarm 17 is displayed; refer to 6.1 *Meaning of the alarm messages*.

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.

4.6.5 Calibration test



The Start calibration menu is locked for the weighing spreaders function and for all machines in **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 control unit.

Perform a 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 either be conducted with a running PTO at a standstill or while driving over a test section.

- ▶ Remove both spreading discs.
- ▶ Move the drop point to the calibration position (value 0).

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 **Enter key**.
The new value is saved.

The Approach drop point Yes = Start alarm message appears in the display (AXIS VS pro only).

⚠ 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.

- ▶ Press the **Start/Stop** key.
The drop point is activated.
The alarm is cleared.
The second calibration page is displayed.



- ▶ Set the spreader side on which the calibration is to be performed.
Press the key to select the **left** spreading side, or
Press the key to select the **right** spreading side.
The icon indicating the selected spreader side has a red background.

⚠ 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.

- ▶ 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.

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.

Recalculating the flow factor

- ▶ Weigh the collected weight (taking into account the empty weight of the collection tray).
- ▶ Enter the weight in the "Input collected weight:" menu item.
- ▶ Press the **Enter** key.

The new value is saved in the control unit.

The display shows the menu Calcul. flow factor



The Flow factor must be between 0.2 and 1.9.

- ▶ Specify the flow factor.
To apply the newly calculated flow factor, press the **Enter** key.
To confirm the previously saved flow factor, press the **ESC** 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.

The calibration is completed.

4.6.6 PTO speed



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



For an optimum 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 your machine.

The specified PTO speed is preset in the control unit to 540 rpm as a standard factory setting. To set another PTO speed, change the value saved in the control unit.

- ▶ Call up the Fertiliser settings > PTO menu.
- ▶ Enter the speed in rpm.

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



Refer to the 4.14.2 *Entering values* chapter.

4.6.7 Disc type



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

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

The mounted spreading disc type is preset in the control unit as a standard factory setting. If other spreading discs are mounted on the machine, enter the correct type in the control unit.

- ▶ 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.

4.6.8 Boundary spreading quantity

The quantity reduction (in percent) can be specified in this menu of the TELIMAT border spreading unit. This setting is used for the activation of the border spreading function via the TELIMAT-Sensor sensor or the T key.



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.

4.6.9 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 aerodynamic factor for the fertilizer used can be found in the fertilizer chart of the machine.

- ▶ 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 4.6.10 GPS Control info

- ▶ Enter the average forward speed in the range of switching positions.
- ▶ Press the **Enter** key.

The third page of the menu is displayed.

GPS Control	
Recommended distances in reference to field edge	
Turn on dist. (m)	22.3
Turn off dist. (m)	12.0
Accept values	

Fig. 28: Calculate OptiPoint, page 3

No.	Meaning	Description
1	Turn on distance - Distance from the edge of the field (in meters) at which the metering slides open.	Fig. 57 Distance on (measured from field border)
2	Turn off distance - Distance from the edge of the field (in meters) at which the metering slides close.	Fig. 58 Distance off (measured from field border)



The parameter values are adjusted manually on this page. See chapter 5.9 *GPS control*.

Changing the values

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

The OptiPoint has been calculated.

The machine control unit switches to the GPS Control Info window.

4.6.10 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 user manual of the GPS terminal.

4.6.11 Fertilizer charts

The fertilizer charts are created and managed in this menu.



Selecting a fertilizer chart has an effect on the fertilizer settings, the machine control unit and the mineral fertilizer spreader. The set application rate is overwritten by the stored value from the fertilizer chart.



Fertilizer charts can be managed automatically and loaded to the control unit. A WiFi module (special equipment) and a smartphone are necessary for this. See 2.7 *WiFi module*

Creating a new fertilizer chart

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

- Call up the Fertiliser settings > Fertiliser chart - Fertiliser chart menu.
- Highlight the name field of an empty fertilizer chart.
- Press the **Enter key**.

The display shows the selection window.

- Press the option Open and back to fertiliser settings.
- Press the **Enter key**.

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

- Enter a name for the Fertiliser chart.

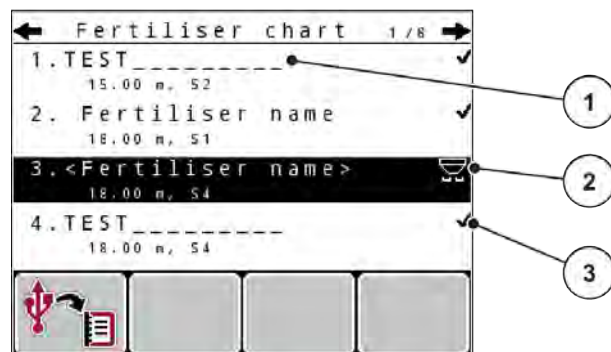


Fig. 29: Menu Fertiliser chart

- | | |
|-------------------------|-------------------------|
| [1] Fertilizer chart | [3] Indicates a |
| | name field |
| [2] Indicates an active | fertilizer chart filled |
| fertilizer chart | with values |



We recommend naming the fertilizer chart after the fertilizer. Specific fertilizers can thus be assigned to fertilizer charts more easily.

- Edit the parameters of the fertilizer chart.
See 4.6 Fertiliser settings in Expert-Mode.

Selecting a fertilizer chart

- Access the menu Fertiliser settings > Fertiliser chart.
- Select the desired fertilizer chart.

The display shows the selection window.

- Select 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.



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 PTO speed.

- **Machine with electrical drop point actuators:** The machine control unit will move the actuators of 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.

4.6.12 Calculate VariSpread

The VariSpread section assistant automatically calculates the section steps in the background. Your inputs for the working width and the drop point in the first pages of the fertilizer settings provide the basis for this.



Editing of the VariSpread table requires specialist knowledge. Please contact your dealer if you want to change the settings.

- [1] Adjustable section settings
- [2] Predefined section settings

Width	drp.pt.	RPM	Applic.
8.00	0.0	540	AUTO
06.00	0.0	540	AUTO
04.00	0.0	540	AUTO
02.00	0.0	540	AUTO
0.00	0.0	540	AUTO

Fig. 30: VariSpread calculation, example with 8 sections (4 on each side)

Communication of the values to the GPS terminal

For machines with VariSpread pro, the values from the VariSpread table are automatically communicated to the GPS terminal. For machines with VariSpread V8, this depends on the GPS terminal.

4.7 Machine settings

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

- Call up the Machine settings - Machine settings menu.

Machine settings		1 / 2
Tractor (km/h)		
AUTO/MAN mode		
+/- appl. rate (%)		20
Idle measurement signal		✓
lbs level sensor		331
Easy toggle		

Fig. 31: Machine settings - Machine settings menu (example)



Not all parameters are displayed simultaneously on one screen. The arrow key can be used to skip between menu windows.

Sub-menu	Meaning	Description
Tractor (km/h) Tractor (km/h)	Determining or calibrating the speed signal	4.7.1 Forward speed calibration
AUTO/MAN mode AUTO/MAN mode	Specifying automatic or manual operating mode	4.7.2 AUTO/MAN mode
+/- appl. rate (%) +/- appl. rate (%)	Presetting for the change of quantity	To be entered in a separate input window
Idle measurement Idle measurement signal	Only AXIS-M EMC: Activation of the signal tone when starting the automatic idle measurement	To be entered in a separate input window.
kg level sensor kg level sensor	Input of the remaining quantity to trigger an alarm message via the weigh cells	
Easy toggle	Restricts the L%/R% toggle key to two conditions	4.7.5 Easy Toggle

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	

4.7.1 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.

- [1] Tractor type
- [2] Transducer display for the speed signal
- [3] Display of the number of pulses over 100 m
- [4] Tractor calibration sub-menu
- [5] Icons for memory locations of profiles 1 to 4

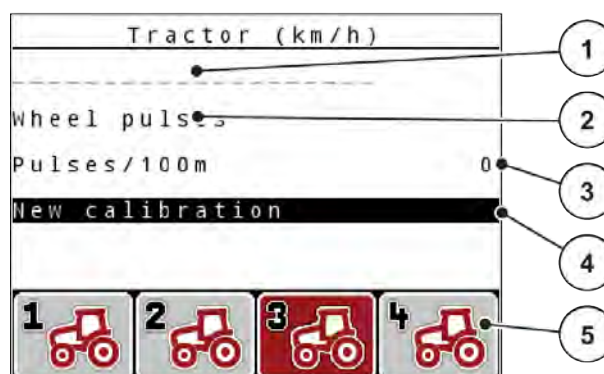


Fig. 32: Menu Tractor (km/h)

Accessing a tractor profile

- ▶ Call up the Machine settings > Tractor (km/h) Tractor (km/h) menu.
The displayed values for name, origin, and number of pulses refer to the profile highlighted in red.
- ▶ Press the function key (F1-F4) under the memory location icon.

■ Recalibrating the speed signal

Either a profile that already exists can be overwritten, or a profile can be assigned to an empty slot in the memory.

- ▶ In the Tractor (km/h) - Tractor (km/h) menu, select the desired memory location using the function key below it.
- ▶ Select the New calibration field.
- ▶ Press the **Enter** key.

The display shows the Tractor calibration menu.

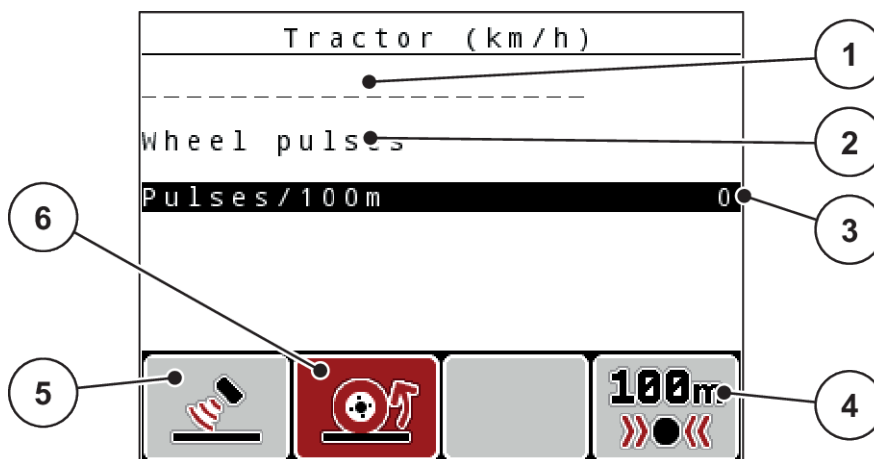


Fig. 33: Tractor (km/h) calibration menu

- | | |
|--|------------------------------------|
| [1] Tractor name field | [4] Automatic calibration sub-menu |
| [2] Display of the origin of the speed signal | [5] Radar pulse transducer |
| [3] Display of the number of pulses over 100 m | [6] Wheel pulse transducer |

- ▶ Select the **Tractor name field**.
- ▶ Press the **Enter key**.
- ▶ Enter the name of the profile.



The name is restricted to 16 characters.

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

- See 4.14.1 *Entering text*

- ▶ Select the pulse transducer for the forward speed signal.
For **radar pulses**, press the **F1** function key [5].
For **wheel pulses**, press the **F2** function key [6].

The display shows the pulse transducer.

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

- ▶ Call up the menu item Tractor (km/h) > New calibration > Pulses/100m.

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

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

- Press the **F4** function key (100 m AUTO, [4])
The calibration run working screen is displayed.

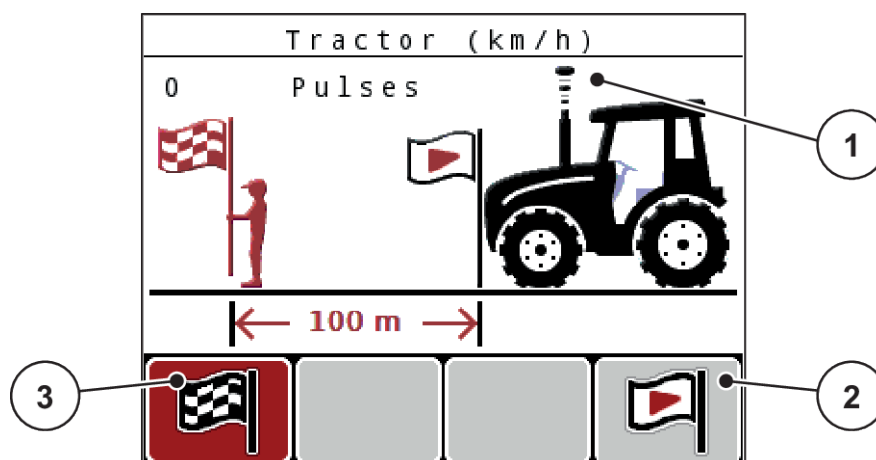


Fig. 34: Calibration run speed signal working screen

- [1] Pulse display
- [2] Start recording pulses
- [3] Stop recording pulses

- Press the **F4** function key [2] at the starting position of the reference distance.
The pulse display is now zero.

The 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 the **F1** [3] function key.

The display shows the number of received pulses.

- Press the **Enter** key.

The new pulse count is saved.

The display reverts to the calibration menu.

■ Simulated speed



The simulated speed is only available for MDS type machines.

In order to immediately apply a sufficient quantity of spreading material when your machine starts spreading, a simulated speed with a selectable duration must be activated.

Set the simulated speed:

- ▶ Open the machine settings.
- ▶ Enter the simulated speed in km/h.
- ▶ Enter the simulation duration in seconds.



The simulated speed is only accepted if the tractor speed is slower than the simulated speed.

4.7.2 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.

It is normal to work with the machine in **automatic** mode.

Manual mode is used 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 the different working modes is described in *5 Spreading operation*.

Menu	Meaning	Description
AUTO km/h + AUTO kg	Select automatic mode with EMC control or automatic weighing Only for MDS W or AXIS M W	Page 94
AUTO km/h + static kg	Selecting automatic mode with static weighing Only for MDS W or AXIS M W	Page 97
AUTO km/h	Selecting automatic mode	Page 99
MAN km/h	Adjustment of forward speed for manual mode	Page 100
MAN scale	Metering slide adjustment for manual mode This operating mode is suitable for spreading slug pellets or fine seeds.	Page 100

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 4.10.2 *Display configuration*.



Important information on the use of operating modes for spreading operations is provided in chapter 5 *Spreading operation*.

■ **AUTO km/h + AUTO kg: automatic mode with automatic mass flow control**

The AUTO km/h + AUTO kg operating mode continuously adjusts the fertilizer quantity during spreading operation according to the forward speed and the flow behavior of the fertilizer. This way, fertilizer metering can be optimized.



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

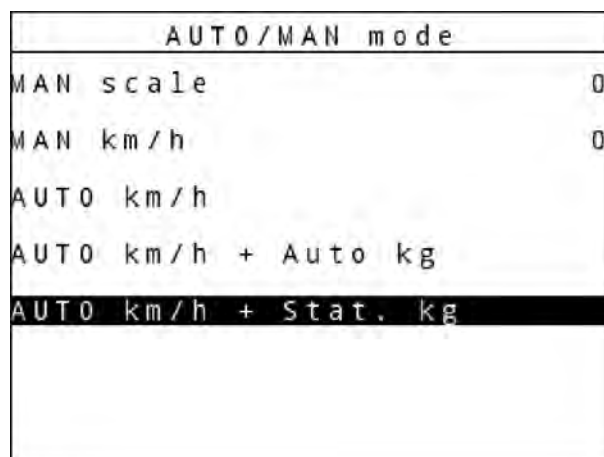
■ **Operating mode AUTO km/h + static kg**

In this operating mode the **flow factor** is determined by means of the weigh cells.



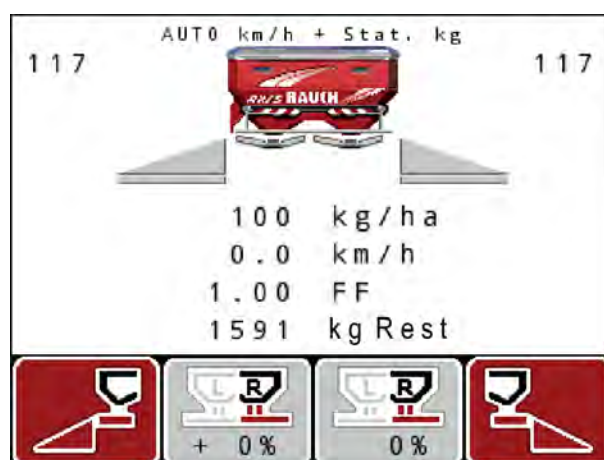
For use only with mass flows < 30 kg/min or on hilly or very uneven ground.

- ▶ Switch on the machine control unit.
- ▶ Call up the Machine settings > AUTO/MAN mode - AUTO/MAN mode menu.
- ▶ Select the operating mode AUTO km/h + static kg
- ▶ Press OK.



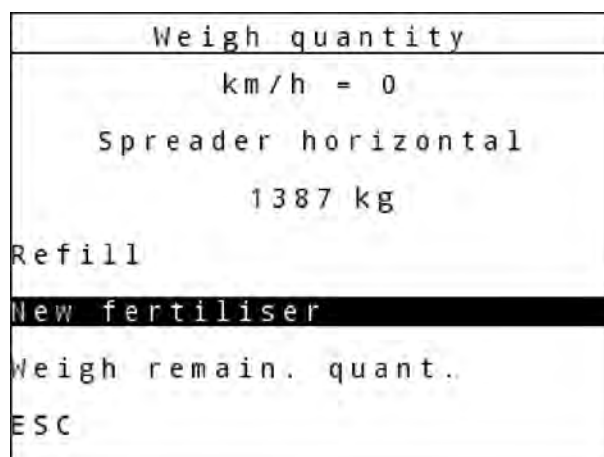
- ▶ Fill the hopper with fertilizer.
 - ▷ Filling weight > 150 kg
 - ▷ The Weigh quantity - Weigh quantity window is displayed.

The machine control unit switches to the working screen.



- ▶ When filling for the first time with a new type of fertilizer, acknowledge the weighing window with "new fertilizer".
 - ▷ The spreader must be standing horizontally.

Selecting New fertiliser - New fertiliser resets the flow factor to 1.0 FF.





Recalculating the flow factor

- ▶ After spreading a quantity > 150 kg
- ▶ Press the kg key on the control unit.
 - ▷ Weigh remain. quant. - Weigh remain. quant.
- ▶ FF.

The machine control unit switches to the working screen.

Weigh quantity
km/h = 0
Spreader horizontal
1387 kg
Refill
New fertiliser
Weigh remain. quant.
ESC

Flow factor Calculation
Flow factor old 1.00
Flow factor new 0.96
 Confirm flow factor

■ AUTO km/h: Automatic operating mode



In order to achieve an optimum spreading result, calibration should be performed before starting spreading.

- ▶ Switch on the QUANTRON-A control unit.
- ▶ Call up the Machine settings > AUTO/MAN mode menu.
- ▶ Highlight the AUTO km/h menu item.
- ▶ Press the **Enter key**.
- ▶ Fertilizer configuration:
 - ▷ Application rate (kg/ha)
 - ▷ Working width (m)
- ▶ Fill the hopper with fertilizer.
- ▶ Perform a calibration test to determine the flow factor
or
Determine the flow factor from the provided fertilizer chart.
- ▶ Press the **Start/Stop key**.

The spreading starts.

■ **MAN km/h: Manual mode**

- ▶ Switch on the QUANTRON-A control unit.
- ▶ Call up the Machine settings > AUTO/MAN mode menu.
- ▶ Highlight the MAN km/h menu item.
- ▶ Press the **Enter key**.
The display shows the input window Forward speed.
- ▶ Enter the value for the forward speed during spreading.
- ▶ Press the **Enter key**.



In order to achieve an optimum spreading result, calibration should be performed before starting spreading.

■ **MAN scale: Manual operation with a scale value**

- ▶ Switch on the QUANTRON A control unit.
- ▶ Call up the Machine settings > AUTO/MAN mode menu.
- ▶ Highlight the MAN scale menu item.
- ▶ Press the **Enter key**.
The display shows the input window Position of dosing slider.
- ▶ Enter the scale value for the metering slide opening.
- ▶ Press the **Enter key**.

The operating mode setting is saved.



For an optimum spreading result in manual mode as well, it is recommended to apply the metering slide opening and forward speed values provided in the fertilizer chart.

In the MAN Skala operating mode the metering slide aperture can be adjusted manually during the spreading operation.

Requirement:

- The metering slides are open (activation with the **Start/Stop** key).
- In the MAN scale working screen, the icons for the sections are filled in red.

- [1] Display of current metering slide scale position

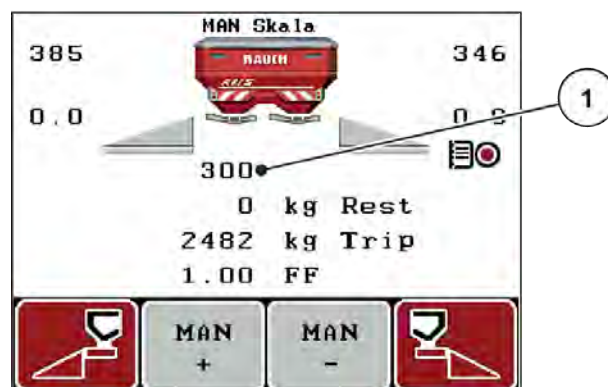


Fig. 35: Working screen MAN scale

- To change the metering slide opening, press the F2 or F3 function key.
 - ▷ **F2:** MAN+ to increase the metering slide opening
 - ▷ **F3:** MAN- to reduce the metering slide opening

4.7.3 +/- 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 %).



During operation, the **F2/F3** function keys can be used to adjust the application rate by the +/- Quantity factor at any time. The default settings can be restored by pressing the C 100 % key.

Specifying the application rate reduction:

- Call up the Machine settings > +/- appl. rate (%) menu.
- Enter the percentage increment for the required change in the application rate.
- Press the **Enter key**.

4.7.4 Signal idle measurement

Here the signal tone for performance of the idling measurement can be activated or deactivated.

- ▶ Select the Idle measurement signal menu item
- ▶ Activate the option by pressing the Enter key.

A check mark is displayed.

The signal sounds when an automatic idling measurement starts.

- ▶ Deactivate the option by pressing the Enter key again.

The check mark disappears.

4.7.5 Easy Toggle

Here the change-over function of the **L%/R%** key can be restricted to 2 statuses of the function keys F1 to F4, so as to protect the working screen from unnecessary change-over actions.

- ▶ Select the **Easy Toggle** sub-menu.
- ▶ Press the **Enter key**.

A check mark is displayed.

The option is active.

*In the working screen, the **L%/R%** key can only be used to switch between the functions application rate change (L+R) and section management (VariSpread).*

- ▶ Press the **Enter key**.

The check mark disappears.

The L%/R% key can be used to switch between the 4 different statuses.

Assignment of function keys	Function
	Application rate change on both sides
	Application rate change on the right side Hidden if the function is activated Easy Toggle
	Application rate change on the left side Hidden if the function is activated Easy Toggle
	Increase or reduce sections

4.8 Fast emptying

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

To prevent the build-up of moisture in the hopper, 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.



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).

- Access the menu Main menu > Fast emptying.

⚠ 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.

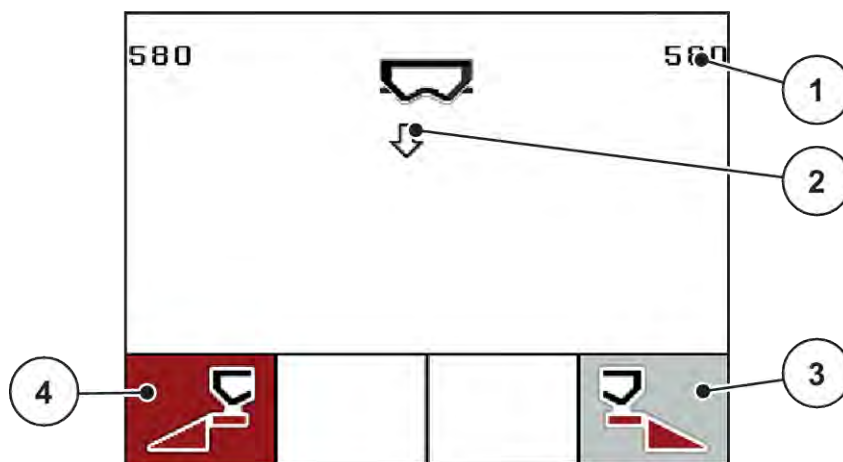


Fig. 36: Fast emptying menu

- | | |
|--|--|
| [1] Metering slide opening display | [4] Fast emptying of the left section (here: selected) |
| [2] Symbol for fast emptying (here: left side selected, not started) | |
| [3] Fast emptying of right section (here: not selected) | |

- Press the **function key** to select the section for which the fast emptying function is to be carried out.

The selected section is shown as an icon in the display.

- Press **Start/Stop**.

The fast emptying process starts.

- Press **Start/Stop** when the hopper is empty.

Fast emptying is complete.

With machines equipped with electrical drop point actuators, the Approach drop point Yes = Start alarm message is activated.

- ▶ Press **Start/Stop**.
The alarm is acknowledged.
The electrical actuators move to the preset value.
- ▶ Press the **ESC** key to return to the main menu.

4.9 Field data

In this menu, up to 200 field data files can be created and managed.

- ▶ Call up the Main menu > Field data menu.

- [1] Display of page number
- [2] Display of filled field data file
- [3] Display of active field data file
- [4] Name of field data file
- [5] F3 function key: Delete field data file
- [6] F2 function key: Delete all field data files
- [7] Display of memory location

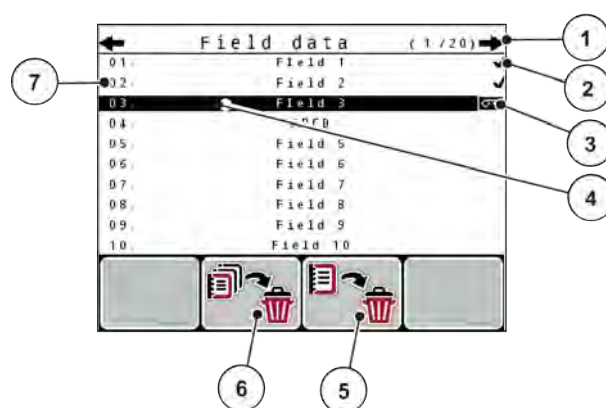


Fig. 37: Menu Field data

4.9.1 Selecting a field data file

The field data file already saved can be selected once again and brought into use. The data already saved in the field data file are not overwritten; instead the new values are simply added.



Press the left/right arrow keys to browse forward and back through the pages in the Field data menu.

- ▶ Select the required field data file.
- ▶ Press the **Enter** key.
The first page of the current field data file is displayed.

4.9.2 Start the recording

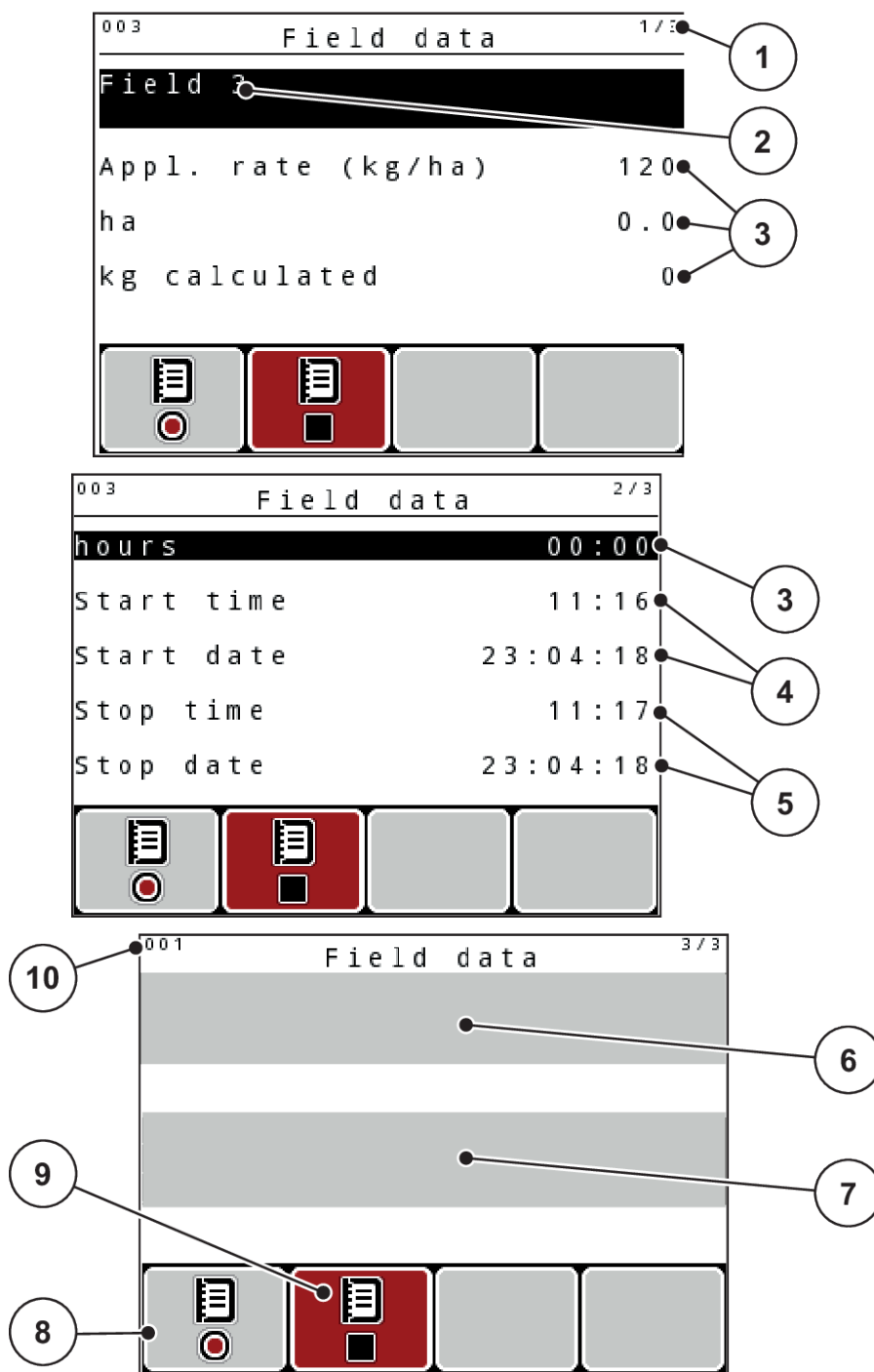


Fig. 38: Display of current field data file

- | | |
|------------------------------------|---|
| [1] Display of the page number | [6] Name field of fertilizer |
| [2] Field data file name | [7] Name field of fertilizer manufacturer |
| [3] Value fields | [8] Function key Start |
| [4] Display of the start time/date | [9] Function key Stop |
| [5] Display of the stop time/date | [10] Display of memory location |

In this menu, up to 200 field data files can be created and managed.

- Press the **F1** function key under the start icon.

The recording starts.

The Field data menu displays the recording icon for the current field data file.

The working screen displays the recording icon.



If a different field data file is opened, the current field data file is stopped. The active field data file cannot be deleted.

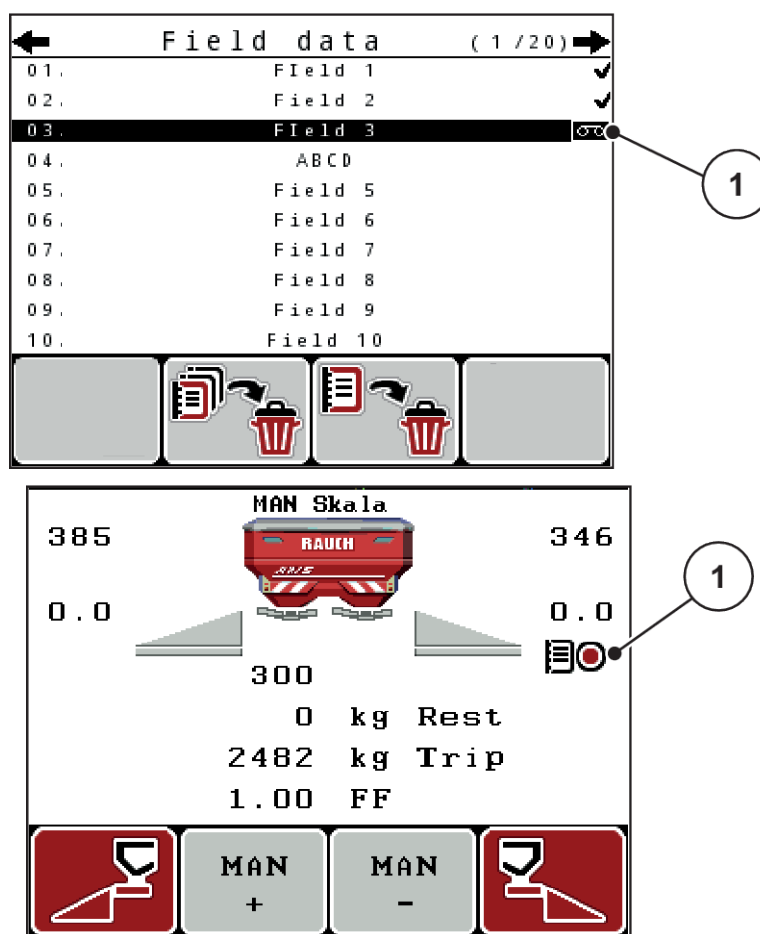


Fig. 39: Recording icon display

[1] Recording icon

4.9.3 Stopping the recording

- In the Field data menu, access the first page of the active field data file.
- Press the **F2** function key below the stop icon.

Recording is finished.

4.9.4 Deleting field data

The QUANTRON-A control unit allows deleting of recorded field data.



Only the content of the field data will be deleted, the field data name will still be displayed in the name field!

Deleting a field data file

- ▶ Access the menu Field data.
- ▶ Select a field data file from the list.
- ▶ Press the **F3** function key below the **Delete** icon. See 5 F3 function key: Delete field data file

The selected field data file has been deleted.

Deleting all field data

- ▶ Access the menu Field data.
- ▶ Press the **F2** function key below the **Delete all** icon. See 6 F2 function key: Delete all field data files

A message appears indicating that all data will be deleted (see 6.1 Meaning of the alarm messages)

- ▶ Press the **Start/Stop** key.

All field data is deleted.

4.10 System/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.

System / Test 1/2	System / Test 2/2
Brightness	total data counter
Language	Service
Display configuration	
Test/diagnosis	
Date 16:04:24	
Time 08:28	
Data transmission	

Fig. 40: System/test menu

Sub-menu	Meaning	Description
Brightness Brightness	Display settings	The settings can be adjusted with the function keys + and -
Language Language	Language setting for menu navigation	4.10.1 Setting the language

Sub-menu	Meaning	Description
Display configuration Display configuration	Setting the displays on the working screen	<i>4.10.2 Display configuration</i>
Mode Mode	Setting the menu mode • Expert • Easy In the EMC function, the mode is automatically set to Expert	<i>4.10.3 Setting the mode</i>
Test/diagnosis Test/diagnosis	Checking of actuators and sensors	<i>4.10.4 Test/diagnosis</i>
Date Date	Setting the date	• Selection and modification of the setting with the arrow keys • Confirmation with Enter key
Time Time	Setting the time	• Selection and modification of the setting with the arrow keys • Confirmation with Enter key
Data transmission Data transmission	Menu for data exchange and serial protocols	<i>4.10.5 Data transmission</i>
Total data counter Total data counter	Display list • spread quantity in kg • spread area in ha • spread time in h • distance traveled in km	<i>4.10.6 Total data counter</i>
Unit Unit	Display of values in the selected unit system: • metric • English	<i>4.10.8 Changing the system of units</i>
Service Service	Service settings	Password-protected; only accessible for service personnel

4.10.1 Setting the language

In the control unit, several languages can be set.

The language package for your country is pre-set at the factory.

- Call up the System / Test > Language menu.

The display shows the first of four pages.

- Select the language for the menus.



The languages are listed in several menu windows. The arrow keys enable switching to the next or adjoining window.

- Press the **Enter** key.

The selection is confirmed.

The control unit restarts automatically.

The menus are displayed in the selected language.

Sprache - Language		1/4
deutsch	DE	✓
Français	FR	
English	UK	
Nederlands	NL	
Italiano	IT	
Español	ES	
русский	RU	

Fig. 41: Language sub-menu, page 1

4.10.2 Display configuration

The three display fields in the working screen can be individually configured and optionally 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

Select display

- ▶ Call up the System/Test - System / Test> Display configuration - Display configuration menu.
- ▶ Select the required display field.
- ▶ Press the **Enter key**.
The available options are displayed in a list.
- ▶ Select the new value to be assigned to the display field.
- ▶ Press the **Enter key**.
The working screen is displayed.

The respective display field now displays the new value.

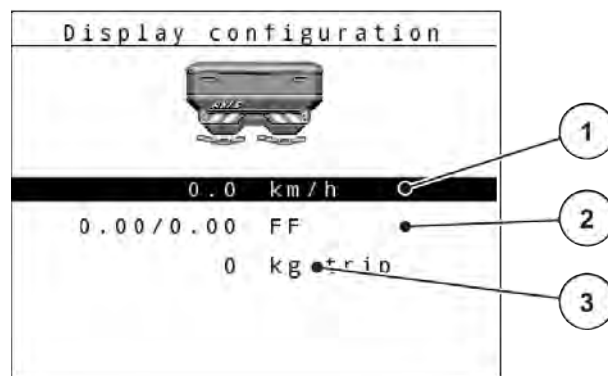


Fig. 42: Display fields

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

4.10.3 Setting the mode

In the QUANTRON-A control unit, 2 different modes are available.

- Easy
- Expert



In the M EMC function, the mode is automatically set to expert.

- In the **Easy** mode, only the parameters of the **fertilizer settings** required for spreading can be accessed: Fertilizer charts can be neither created nor managed.
- In **Expert** mode, all available parameters can be accessed in the **Fertilizer settings** menu.

Selecting a mode

- ▶ Select the menu item System / Test > Mode.
- ▶ Press the **Enter key**.

The display shows the current mode.

Press the **Enter key** to switch between the two modes.

4.10.4 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.

- ▶ Before carrying out the tests, ensure that nobody is present in the danger zone of the machine.

Sub-menu	Meaning	Description
Test points metering slide Test points slider	Test for approaching the various position points of the metering sliders	Calibration check
Metering slide Metering slider	Moving the left and right metering sliders	<i>Example of metering slides</i>
Voltage Voltage	Checking the operating voltage	
Level sensors Level sensor	Checking the level sensors	
Weigh cells Weigh cell	Checking the sensors	
EMC sensors EMC sensors	Checking the EMC sensors	
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	<i>Example: LIN bus</i>
TELIMAT sensor	Checking the TELIMAT sensors	
Sensor brd.spread	Checking the sensors for the border spreading unit	<i>Example: GSE sensor</i>
Hopper cover Hopper cover	Checking the actuators	
SpreadLight SpreadLight	Checking the operating lights	

■ **Example of metering slides**

⚠ CAUTION!

Risk of injury due to moving machine parts

During the tests, machine parts may move automatically.

- ▶ Before carrying out the tests, ensure that nobody is present in the danger zone of the machine.

- ▶ Call up the System/Test - System / Test > Test/Diagnosis - Test/diagnosis menu
- ▶ Select the Metreing slider - Metering slider menu.
- ▶ Press the **Enter key**.

The status of the motors/sensors is displayed.

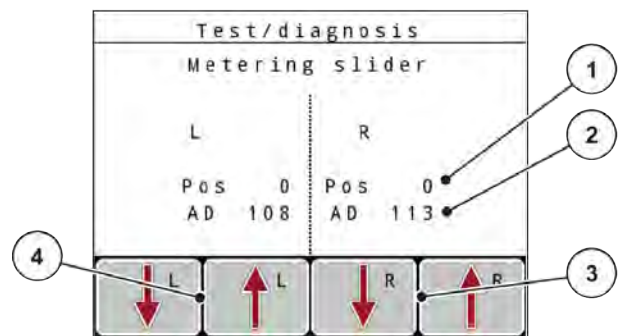


Fig. 43: Test/diagnosis; example: Metering slide

- [1] Position display
- [2] Signal display
- [3] Function keys for right actuator
- [4] Function keys for left actuator

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

Press the up/down arrows to open and close the metering slides.

■ Example: LIN bus

- ▶ Call up the System/Test - System / Test > Test/diagnosis - Test/diagnosis menu
- ▶ Highlight the LIN bus menu item.
- ▶ Press the **Enter key**.

The status of the sensors/actuators is displayed.



Fig. 44: Test/diagnosis; example: LIN bus

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

LIN bus device status notification

The devices indicate various conditions:

- 0 = OK; no equipment fault
- 2 = blockage
- 4 = overload

■ Example: GSE sensor

⚠ CAUTION!

Risk of injury due to moving machine parts

During the tests, machine parts may move automatically.

- ▶ Before carrying out the tests, ensure that nobody is present in the danger zone of the machine.

- ▶ Call up the System/Test - System / Test > Test/diagnosis - Test/diagnosis menu
- ▶ Highlight the Sensor brd.spread menu item.
- ▶ Press the **Enter** key.

The display shows the status of the sensor.

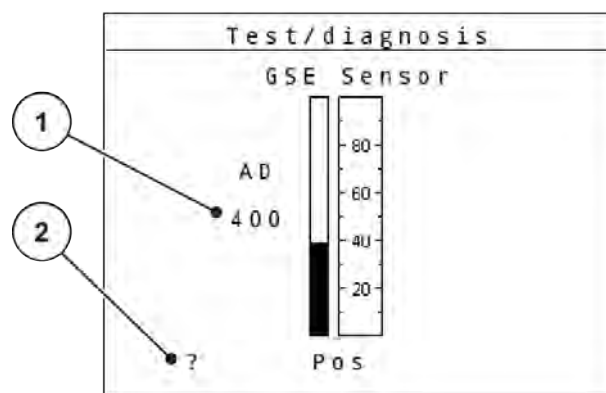


Fig. 45: Test/diagnosis; example: LIN bus

[1] Status display [2] Sensor position display

Sensor position display

The sensors report the position of the border spreading unit:

- **O** = Up; the border spreading unit is inactive.
- **U** = Down; the border spreading unit is in the working position.
- **?** = the border spreading unit has not yet reached its end position.

4.10.5 Data transmission

Data transmission is carried out using various data protocols.

Sub-menu	Meaning
ASD	Automatic field documentation; transmission of field data to a PDA and/or Pocket PC via Bluetooth
LH5000	Serial communication, e.g., spreading using application maps
GPS Control	Protocol for automatic section control using an external terminal

Sub-menu	Meaning
GPS Control VRA	VRA: Variable Rate Application Protocol for the automatic transmission of the target application rate
TUVR	Protocol for automatic section control and application rate change for specific sub-areas with an external Trimble terminal
GPS km/h	Only possible with TUVR protocol and Trimble terminal. • Can be activated/deactivated If activated, the speed signal of the GPS device is used as a signal source for the AUTO km/h operating mode. ► Select the menu item using the bar. ► Press the Enter key. <i>A check mark appears on the screen.</i> <i>GPS km/h is active.</i> <i>The speed signal of the GPS device is used as a signal source for the AUTO km/h operating mode.</i>

4.10.6 Total data counter

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

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



This menu is for information purposes only.

4.10.7 Service



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

4.10.8 Changing the system of units

Your system of units has been preset at the factory. However, the system can be changed from metric to imperial units at any time.

- Call up the System / Test menu.
- Select the menu Unit.
- Press the **Enter key** to switch between imperial and metric.

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
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

4.11 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.

4.12 Operating lights (SpreadLight)

■ Only for AXIS (special equipment)

The SpreadLight function can be activated in this menu to monitor the spreading pattern even in night mode.

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

- [1] Turn off duration
- [2] Manual mode: Switch on the working headlights
- [3] Activate automatic mode

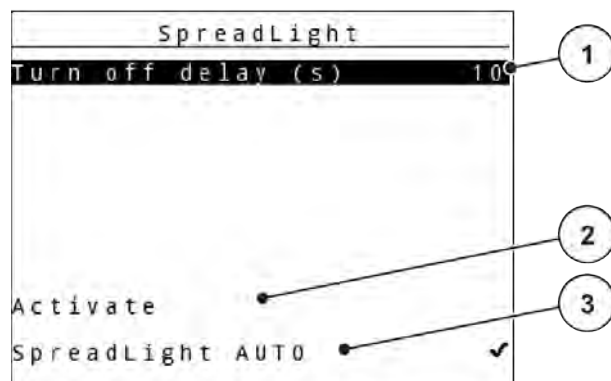


Fig. 46: SpreadLight menu

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 - 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 the Turn off delay (s) [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 main 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.

4.13 Hopper cover

■ Only for AXIS (special equipment)

! WARNING!

Danger of crushing and shearing due to externally-actuated components

The hopper cover will move without warning and can cause personal injury.

- Ensure that nobody is present in the hazard zone.

The AXIS EMC machine is equipped with an electrically operated hopper cover. For the refilling process at the end of the field, the control unit and an electrical drive can be used to open and close the hopper cover.



The menu is only used for operating the actuators which open or close the hopper cover. The machine control unit does not detect the exact position of the hopper cover.

Monitor the movement of the hopper cover.

- [1] Opening process display
- [2] F4 function key: Close hopper cover
- [3] Static display of the hopper cover
- [4] F2 function key: Stop process
- [5] F1 function key: Open hopper cover

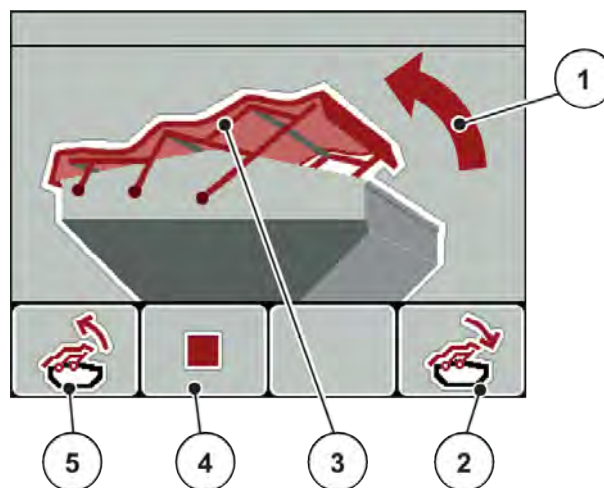


Fig. 47: Hopper cover menu

CAUTION!

Material damage due to insufficient clearance

To allow the hopper cover to be opened and closed, it requires a sufficient clearance above the hopper. If the clearance is insufficient, the hopper cover may tear. The lever of the hopper cover may be broken and the hopper cover may damage the environment.

- Ensure that the hopper cover has sufficient clearance.

Moving the hopper cover

- Press the **Menu** key.
- Call up the Hopper cover menu.
- Press the **F1** function key.
*During the movement, an arrow appears which indicates the **OPEN** direction.*
The hopper cover will open fully.
- Pour in fertilizer.
- Press the **F4** function key.
*During the movement, an arrow appears which indicates the **CLOSE** direction.*
The hopper cover will be closed.





The movement of the hopper cover can be stopped if required by pressing the **F2** function key. The hopper cover then remains in the intermediate position until it is completely closed or opened.

4.14 Special functions

4.14.1 Entering text

Some menus permit the entry of freely editable text.

- [1] Input field
- [2] Character field, display of available characters (language-dependent)
- [3] Function keys for navigation in the input field

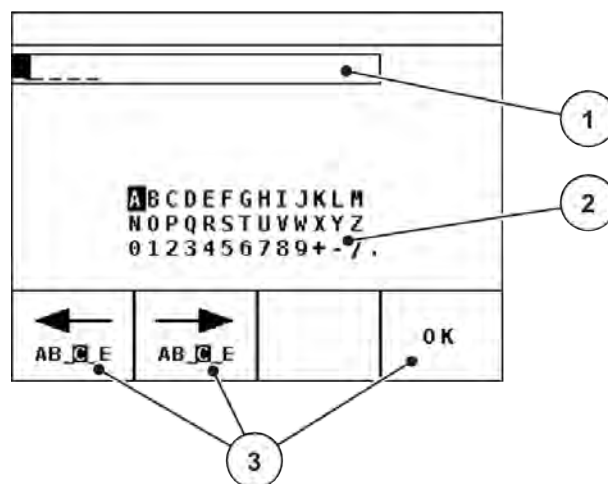


Fig. 48: Text input menu

Entering text:

- ▶ Switch from the higher-level menu to the Text input menu.
- ▶ Use the **function keys** to move the cursor to the position of the character to be written first in the input field
- ▶ Use the **arrow keys** to highlight the character to be written in the character field.
- ▶ Press the **Enter key**.

The highlighted character appears in the input field.

The cursor jumps to the next position.

- ▶ Continue this procedure until the entire text has been entered.
- ▶ Press the **F4/OK** function key.

The input is confirmed.

The control unit saves the text.

The display shows the previous menu.

An individual character can be replaced by another character.

Overwriting characters:

- ▶ Use the **function keys** to move the cursor to the position of the character to be deleted in the input field.
- ▶ Use the **arrow keys** to highlight the character to be written in the character field.
- ▶ Press the **Enter key**.

The character is overwritten.

- ▶ Press the **F4/OK** function key.

The input is confirmed.

The control unit saves the text.

The display shows the previous menu.



It is not possible to delete individual characters. Individual characters can only be replaced with a blank space (underline at the end of the first 2 lines of characters).

The complete input can be deleted.



Deleting an input:

- ▶ Press the **C 100 %** key.

The complete input is deleted.

- ▶ Enter new text, if necessary.
- ▶ Press the **F4/OK** function key.

4.14.2

Entering values

Some menus permit the entry of numeric values.



- ▶ Use the horizontal arrow keys to move the cursor to the position of the numerical value to be written in the input field.
- ▶ Use the vertical arrow keys to enter the required numerical value.
 - ▷ **Arrow up:** Value increases.
 - ▷ **Arrow down:** Value decreases.
 - ▷ **Arrow left/right:** Cursor moves to the left/right.
- ▶ Press the **Enter key**.

Deleting an input:

- ▶ Press the **C 100 %** key.

The complete input is deleted.

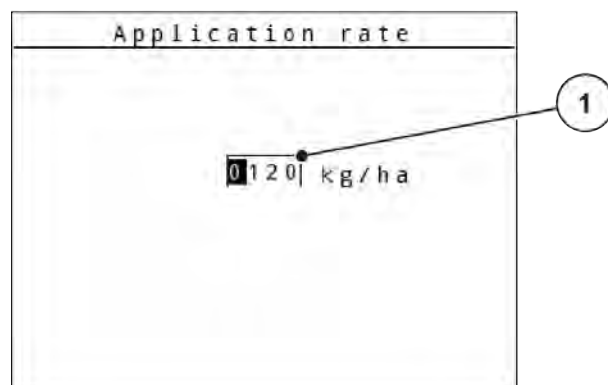


Fig. 49: Input of numerical value (example: Application rate)

[1] Input field

4.14.3 Creating screenshots



With every software update, data will be overwritten. We recommend always storing your settings as screenshots on a USB stick before implementing a software update.

Use a USB stick with an illuminated status indicator (LED).

- ▶ Remove the cover from the USB port.
- ▶ Insert a USB stick into the USB port.

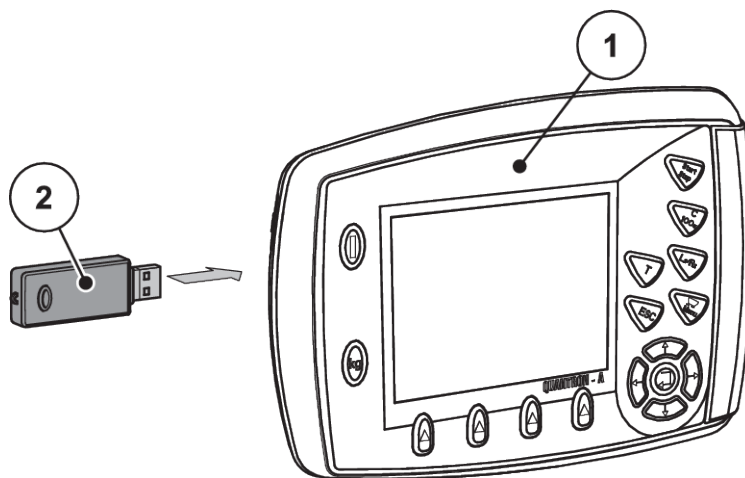


Fig. 50: Inserting a USB stick

[1] Control unit

[2] USB stick

- ▶ Call up the Main menu > Fertiliser settings menu.
The first page of the fertilizer settings is displayed.
- ▶ Press the **T** key and the **L%/R%** key **simultaneously**.
The status indicator of the USB stick flashes.

The control unit beeps twice.

An image is stored as bitmap on the USB stick.
- ▶ Store all fertilizer settings pages as screenshots.
- ▶ Call up the Main menu > Machine settings menu.
The first page of the machine configuration settings is displayed.
- ▶ Press the **T** key and the **L%/R%** key **simultaneously**.
The status indicator of the USB stick flashes.

The control unit beeps twice.

An image is stored as bitmap on the USB stick.
- ▶ Save both pages of the Machine settings menu as screenshots.
- ▶ Store all screenshots on your PC.
- ▶ After the software update, open the screenshots and enter the settings in the QUANTRON A control unit based on the screenshots.

The QUANTRON A control unit is ready to operate with your settings.

5 Spreading operation

The machine control unit helps you to enter the machine settings before starting work. During spreading, functions of the machine control unit are also active in the background. This allows you to monitor the quality of the fertilizer spreading.



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

5.1 TELIMAT boundary spreading unit

CAUTION!

Risk of injury due to automatic adjustment of the TELIMAT unit!

When the **boundary spreading key** is pressed, an electrical positioning cylinder automatically moves the machine to the boundary spreading position. This may cause injury and property damages.

- ▶ Before pressing the **boundary spreading key**, make sure that nobody is present in the hazard zone of the machine.



The TELIMAT option is preset for the control unit at the factory!

TELIMAT with hydraulic remote control

The TELIMAT unit is hydraulically moved to its working or idle position. The TELIMAT equipment is activated and deactivated by pressing the Limited border spreading key. Depending on the position, the display shows or hides the **TELIMAT icon**.

TELIMAT with hydraulic remote control and TELIMAT sensors

If TELIMAT sensors are connected and activated, the **TELIMAT icon** is shown on the display of the control unit when the TELIMAT border spreading unit is hydraulically moved into its operating position.

If the TELIMAT unit is moved back to the idle position, the **TELIMAT icon** is hidden again. The sensors monitor the TELIMAT adjustment and automatically activate or deactivate the TELIMAT unit. The border spreading key has no function with this option.

If the status of the TELIMAT unit cannot be detected for more than 5 seconds, alarm message 14 will be displayed; see 6.1 *Meaning of the alarm messages*.

5.2 GSE sensor

If a sensor for the GSE 30/GSE 60 boundary spreading unit is connected and activated, the GSE icon is shown on the display of the control unit when the boundary spreading unit is hydraulically moved into its operating position; see *Fig. 3 Control unit display – example AXIS-M working screen*. If the boundary spreading unit is moved back to the idle position, the GSE icon is hidden again.

During adjustments, a ? symbol is displayed on the machine control unit display, which disappears once the working position is reached. The sensor monitors the position of the GSE boundary spreading unit. If the status of the boundary spreading unit cannot be detected for more than 5 seconds, alarm message 94 will be displayed; see *6.1 Meaning of the alarm messages*

5.3 Working with sections

5.3.1 Spreading with reduced sections

Fertilizer can be spread to sections on one side or both sides, in order to adapt the full spreading width to the field requirements. Each spreading side can be adjusted in 4 preset sections (VariSpread 8) or infinitely variable sections (VariSpread pro).



- See *2.1 Overview of supported machines*
- Press the L%/R% key until the desired function keys are displayed.

- [1] Right section will spread to the entire half
- [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] Left section is reduced to 2 steps

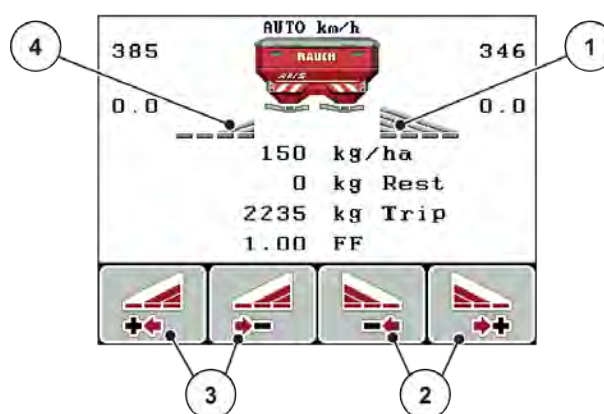


Fig. 51: Working screen for spreading operation with sections



Each section can be reduced or increased in 4 steps or continuously.

- Press the **Reduce left spreading width** function key 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 spreading width can be set via the VariSpread spreading width wizard.

- See 4.6.12 Calculate VariSpread

5.3.2 Spreading operation with one section and in boundary spreading mode

■ **AXIS-M V8, MDS V8**

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

- [1] Display of application rate change in border spreading mode
- [2] The right spreading side is in border spreading mode.
- [3] The right spreading side is activated.
- [4] Reduce or increase left section
- [5] Left section adjustable in 4 steps (VariSpread 8)

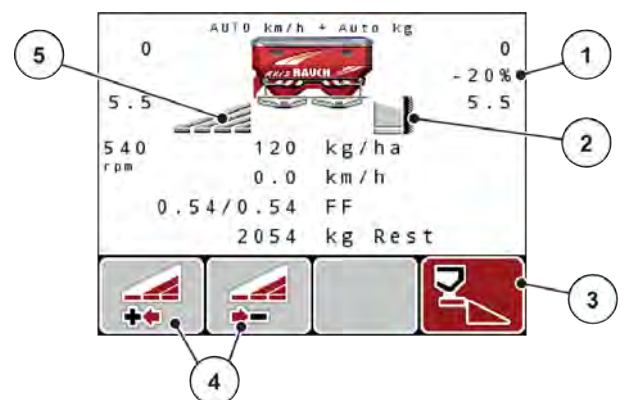


Fig. 52: Working screen with one section on the left, border spreading side on the right

- 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 in order to reduce the section by one step.
- Press the C/100 % function key to revert immediately to the full working width.
- Only for **TELIMAT** versions without sensor: If you press the **T** key, limited border spreading is deactivated.

■ **AXIS-M VariSpread pro**

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

- [1] Display of application rate change in border spreading mode
- [2] The right spreading side is in border spreading mode.
- [3] The right spreading side is activated.
- [4] Reduce or increase left section
- [5] Infinitely variable adjustment of left section (VariSpread pro)

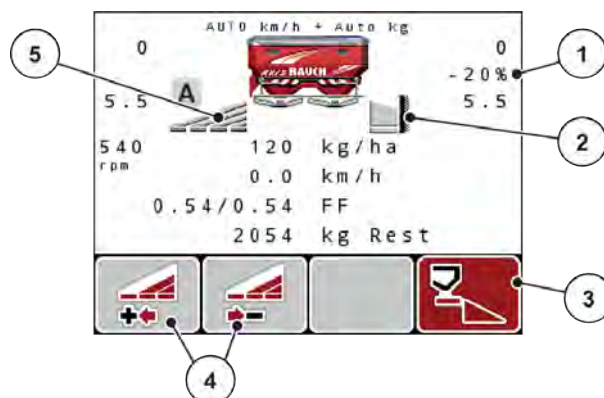


Fig. 53: Working screen with one section on the left, border spreading side on the right

- The application rate on the left is set to the full spreading side.
- 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 in order to reduce the section.
- Press the C/100 % function key to revert immediately to the full spreading side.
- Only for TELIMAT versions without sensor: If you press the **T** key, limited border spreading is deactivated.



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 5.9 GPS control

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

5.4.1 For weighing spreaders only: Control by means of the weigh cells

Important: When weighing the quantity, the following requirements must be satisfied:

- The machine is at a standstill.
- The PTO shaft is switched off.
- The machine is in a horizontal position and off the ground.
- The tractor is at a standstill.
- the control unit is switched on.

■ Operating mode AUTO km/h + AUTO kg

In this operating mode AUTO km/h + AUTO kg the flow factor is determined dynamically by means of the weigh cells.

Procedure:

- When using mass flows > 30 kg/min

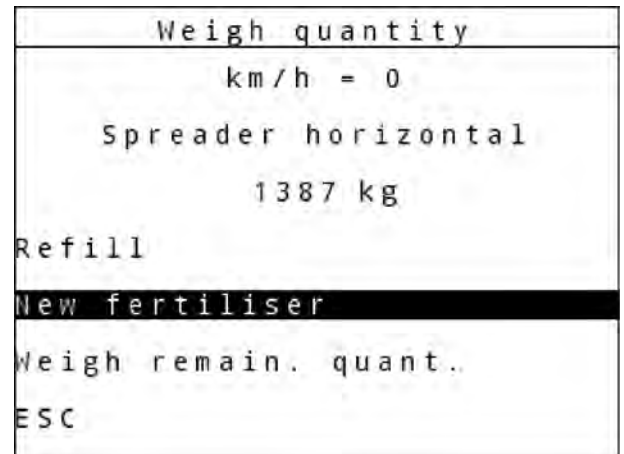
- ▶ Switch on the machine control unit.
- ▶ Call up the Machine Settings > AUTO/MAN mode - AUTO/MAN mode menu.
- ▶ Select the AUTO km/h + AUTO kg operating mode.
- ▶ Confirm the selection by pressing the Enter key.
- ▶ Fill the hopper with fertilizer.
 - ▷ Filling weight greater than 150 kg.
 - ▷ The Weigh quantity - Weigh quantity window is displayed.

- ▶ When first filling with a new type of fertilizer, select New fertiliser [2].

- ▷ The spreader must be standing horizontally.

Selecting New fertiliser [2] resets the flow factor to 1.0 FF.

- ▶ When refilling: Select Refill [1].



[1] Refill - Refill

[2] New fertiliser -
New fertiliser

■ **Mass flow control with the M EMC function**

The mass flow is measured separately on both spreader disc sides in order to be able to immediately correct any deviations from the specified application rate.

The M EMC function requires the following machine data for mass flow control:

- PTO speed
- Disc type

A PTO speed between 360 and 390 rpm is possible.

- **The desired speed should remain constant during spreading (+/- 10 rpm).** This ensures a high quality of control.
- Idling measurement can be performed **only** if the actual PTO speed deviates by **no more than +/- 10 rpm** from the input in the PTO menu. Outside of the range, no idling measurement can be performed.

Requirements for spreading:

- The AUTO km/h + AUTO kg operating mode is active. (See 4.7.2 AUTO/MAN mode)



- ▶ Fill the hopper with fertilizer.
- ▶ Fertilizer configuration:
 - ▷ Appl. rate (kg/ha)
 - ▷ Working width (m)
 - ▷ Application rate: min. 15 kg/min
- ▶ Enter the PTO speed in the corresponding menu.
See 4.6.6 *PTO speed*
- ▶ Select the spreading disc type used in the appropriate menu.
See 4.6.7 *Disc type*
- ▶ Activate the PTO.
- ▶ Set the PTO to the entered PTO speed.
The Idle measurement screen is displayed
- ▶ Wait until the progress bar has been completed.
The idling measurement has been completed.

The idling time is reset to 20 min.
- ▶ Press the Start/Stop key.

The spreading starts.

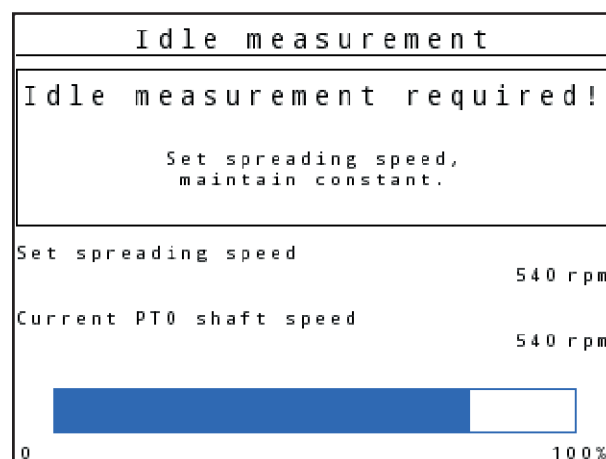


Fig. 54: Idling measurement information screen

As long as the PTO is still running, a new idling measurement is started at the latest every 20 minutes once the idling time has expired.

Under certain circumstances, an idling measurement is required in order to record the new reference data before continuing the spreading work.

As soon as an idling measurement is required during spreading work, the information screen appears.



The idling time can be assigned to the freely selectable display fields in the working screen, thus allowing the time until the next idling measurement to be monitored. 4.10.2 *Display configuration*



When starting the spreading disc, changing the PTO speed, and changing the spreading disc type, a new idling measurement is mandatory!

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

Requirement:

- The spreading work has been stopped (Start/Stop key or both sections deactivated).
- The operating screen is displayed.
- The minimum PTO speed is 360 rpm.

- ▶ Press the **Enter key**.

The Idle measurement screen is displayed.

The idle measurement is started.

- ▶ Adjust PTO speed if necessary.

The bar displays the progress.

5.5 Spreading with the AUTO km/h + static kg working mode

■ Operating mode AUTO km/h + static kg

In this operating mode the **flow factor** is determined by means of the weigh cells.



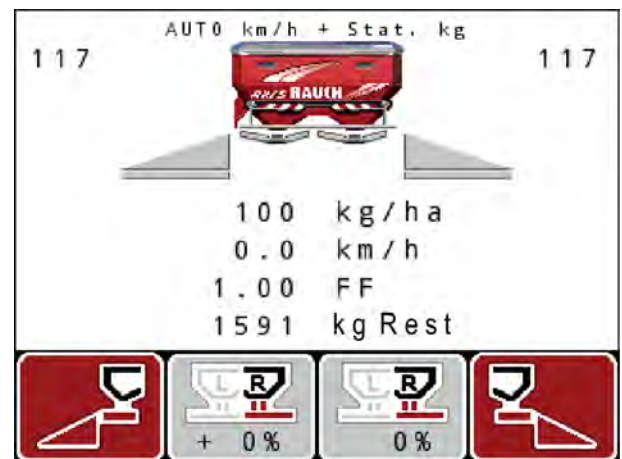
For use only with mass flows < 30 kg/min or on hilly or very uneven ground.

- ▶ Switch on the machine control unit.
- ▶ Call up the Machine settings > AUTO/MAN mode - AUTO/MAN mode menu.
- ▶ Select the operating mode AUTO km/h + static kg
- ▶ Press OK.

AUTO/MAN mode	
MAN scale	0
MAN km/h	0
AUTO km/h	
AUTO km/h + Auto kg	
AUTO km/h + Stat. kg	

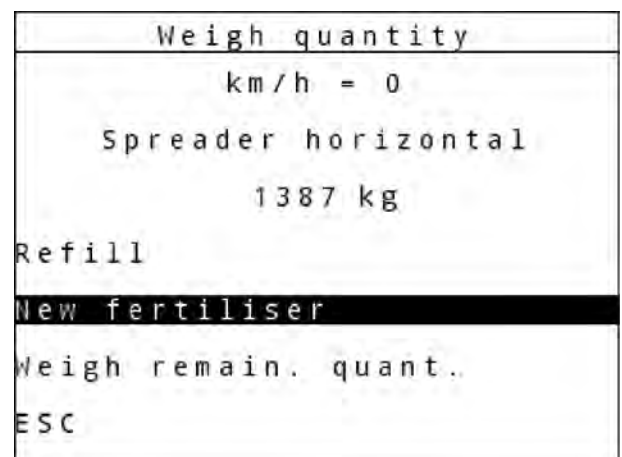
- Fill the hopper with fertilizer.
 - ▷ Filling weight > 150 kg
 - ▷ The Weigh quantity - Weigh quantity window is displayed.

The machine control unit switches to the working screen.



- When filling for the first time with a new type of fertilizer, acknowledge the weighing window with "new fertilizer".
 - ▷ The spreader must be standing horizontally.

Selecting New fertiliser - New fertiliser resets the flow factor to 1.0 FF.





Recalculating the flow factor

- ▶ After spreading a quantity > 150 kg
- ▶ Press the kg key on the control unit.
 - ▷ Weigh remain. quant. - Weigh remain. quant.
- ▶ FF.

The machine control unit switches to the working screen.

Weigh quantity	
km/h = 0	
Spreader horizontal	
1387 kg	
Refill	
New fertiliser	
Weigh remain. quant.	
ESC	

Flow factor Calculation	
Flow factor old	1.00
Flow factor new	0.96
⚠ Confirm flow factor ↩	

5.6 Spreading with the AUTO km/h operating mode

In AUTO km/h operating mode, the control unit automatically controls the actuator depending on the speed signal.

- ▶ Fertilizer configuration:
 - ▷ Appl. rate (kg/ha)
 - ▷ Working width (m)
- ▶ Fill the hopper with fertilizer.



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

- ▶ Perform a calibration test to determine the flow factor
or
Take the flow factor from the fertilizer chart and manually enter the flow factor.
- ▶ Press Start/Stop.



The spreading starts.

5.7 Spreading with the MAN km/h operating mode

Operate in the MAN km/h operating mode is active if there is no speed signal available.

- ▶ Call up the Machine settings > AUTO/MAN mode menu.
- ▶ Select the MAN km/h menu item.
The Forward speed input window is displayed.
- ▶ Enter the value for the forward speed during spreading.
- ▶ Press OK.
- ▶ Fertilizer configuration:
 - ▷ Appl. rate (kg/ha)
 - ▷ Working width (m)
- ▶ Fill the hopper with fertilizer.



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

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



- ▶ Press Start/Stop.

The spreading starts.



Always maintain the set forward speed during spreading.

5.8 Spreading in the MAN scale operating mode

In the MAN scale operating mode the metering slide aperture can be adjusted manually during the spreading operation.

Operate in manual mode only:

- if there is no speed signal (radar or wheel sensor not available or defective)
- 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 maintained in manual operating mode.

Requirement:

- The metering slides are open (activation with the Start/Stop key).
- In the MAN scale working screen, the icons for the spreading sides are filled in red.

[1] Display of metering slide scale position

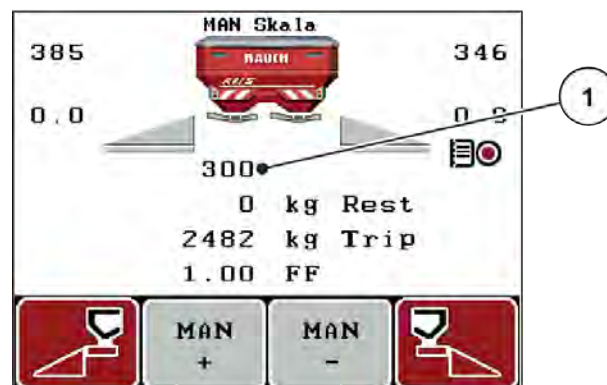


Fig. 55: MAN scale working screen

- To change the metering slide opening, press the F2 or F3 function key.

F2: MAN+ to increase the metering slide opening

or

F3: MAN- to reduce the metering slide opening



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.

5.9 GPS control

The QUANTRON A control unit can be combined with a GPS-compatible device. Various data is exchanged between both devices to automate control.



We recommend using our CCI 800 control unit in combination with the QUANTRON-A.

- Please contact your dealer for further information.
- Comply with the operating manual for the CCI 800 GPS Control.

The **OptiPoint** function (AXIS only) calculates the optimal switching-on and switching-off point for spreading in headlands on the basis of the settings in the machine control unit; see 4.6.9 *Calculate OptiPoint*.



To use the **GPS control** functions of the QUANTRON A control unit, the serial communication must be activated!

- In the menu System / Test > Data transmission, activate the sub-menu item GPS-Control.



AXIS with VariSpread pro: Depending on which GPS terminal is used, the machine control can reduce the number of sections. Please contact your dealer about this.



If application maps are also used, then serial communication must be activated.

- In the menu System / Test > Data transmission, activate the sub-menu item **GPS-Control + VRA**.

The target quantity from the application map on the GPS terminal is then automatically processed in the QUANTRON A control unit.



The **A** symbol next to the spreading wedges indicates that the automatic function is enabled. The control unit opens and closes the individual sections depending on the 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.

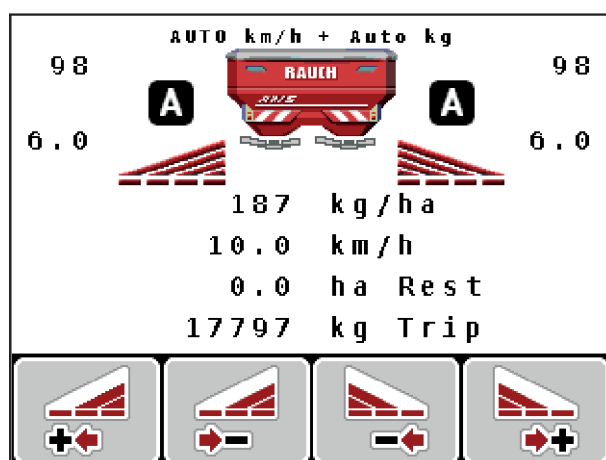


Fig. 56: Working screen display: Spreading operation with GPS Control

■ 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

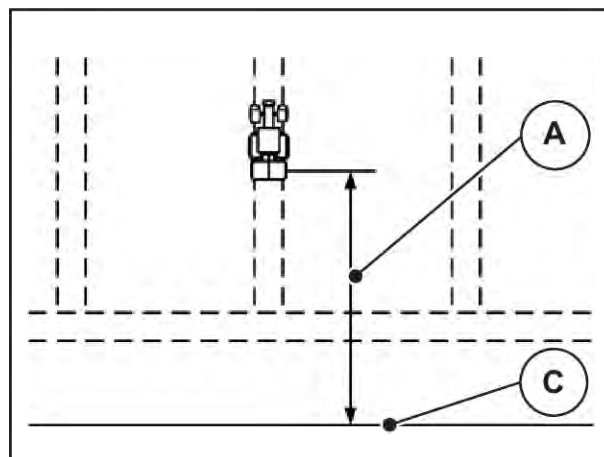


Fig. 57: Distance on (measured from field border)

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.

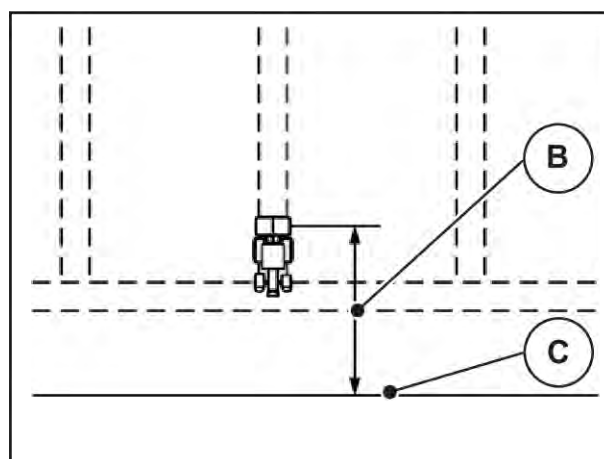


Fig. 58: Distance off (measured from field border)

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 QUANTRON A control unit 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.
7	Data will be deleted! Delete = START Cancel = ESC	Safety alarm to prevent the unintentional deletion of data
8	Min. quantity (150 kg) not achieved, old factor valid	Flow factor calculation not possible • The application rate is too low to calculate the new flow factor when the remaining quantity is weighed. • The old flow factor is retained.

No.	Message in display	Meaning and possible cause
9	Application rate Min. setting = 10 Max. setting = 3000	Reference to the value range of the application rate The entered value is not permitted.
10	Working width Min. setting = 12.00 Max. setting = 50.00	Reference to the value range of the working width The entered value is not permitted.
11	Flow factor Min. setting = 0.40 Max. setting = 1.90	Reference to the value range of the flow factor The entered value is not permitted.
12	Transmission fault. No RS232 connection	An error has occurred during data transmission to the control unit. The data has not been transmitted.
14	Error by setting TELIMAT	Alarm for the TELIMAT sensor This error message is displayed if the TELIMAT status is not detected for more than 5 seconds.
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
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

No.	Message in display	Meaning and possible cause
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
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
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.
36	Weighing quantity impossible. Machine must stop.	Alarm message during weighing The Weigh quantity function can only be carried out if the machine is at a standstill and in a horizontal position.
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

No.	Message in display	Meaning and possible cause
50	Idle meas. impossible. EMC control deactivated!	PTO speed not permanently stable
51	Hopper empty!	The kg level sensor reports "empty."
52	Error at hopper cover	The position of the hopper cover could not be reached. • Blockage • Defective actuator
53	Defect at hopper cover	The hopper cover actuator cannot reach the target value for the movement. • Blockage • Defective actuator
54	Change TELIMAT position!	The TELIMAT position does not correspond to the state notified by GPS Control.
72	Error at SpreadLight	Power supply is too high; the operating lights will be switched off.
73	Error at SpreadLight	Overload
74	Defect at SpreadLight	Connection error • Defective cable • Loose plug connector
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.
94	Error at border spreading equip	Alarm for the GSE sensor. This error message is displayed if the GSE status is not detected for more than 5 seconds.

6.2 Fault/alarm

Alarm messages are highlighted on the display and displayed with a warning symbol.

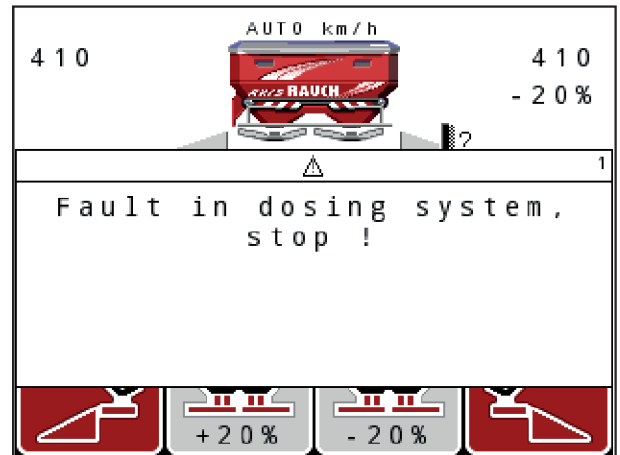


Fig. 59: Example of an alarm message

Acknowledging an alarm message:

- Rectify the cause of the alarm message.

For this refer to the user manual of the machine and to section 6.1 *Meaning of the alarm messages*.

- Press the **C 100%** membrane key.



7 Special equipment

Illustration	Designation
	Level sensor
	Forward speed sensor
	Y cable RS232 for data exchange (e.g., GPS, N sensor, etc.)
	System tractor cable set, 12 m

Illustration	Designation
 A black cable with a white rectangular receiver unit. The unit has the 'AccoSat' logo, a left-pointing arrow, and the website 'www.maco-technik.de'.	GSP cable and receiver
 A black cable with a green connector at one end and a blue connector at the other. A small white label with the number '20' is attached to the cable.	TELIMAT sensor
 A metal bracket consisting of a horizontal plate with two mounting holes and a vertical rod passing through it.	Universal bracket
 A small black rectangular module with a cable attached to one end and a metal mounting bracket on the other.	WiFi module

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
Tableaux d'épandage RAUCH
Tabele wysiewu RAUCH
RAUCH Strooitabellen
RAUCH Tabella di spargimento
RAUCH Spredetabellen
RAUCH Levitystaulukot
RAUCH Spridningstabellen
RAUCH Tablas de abonado



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