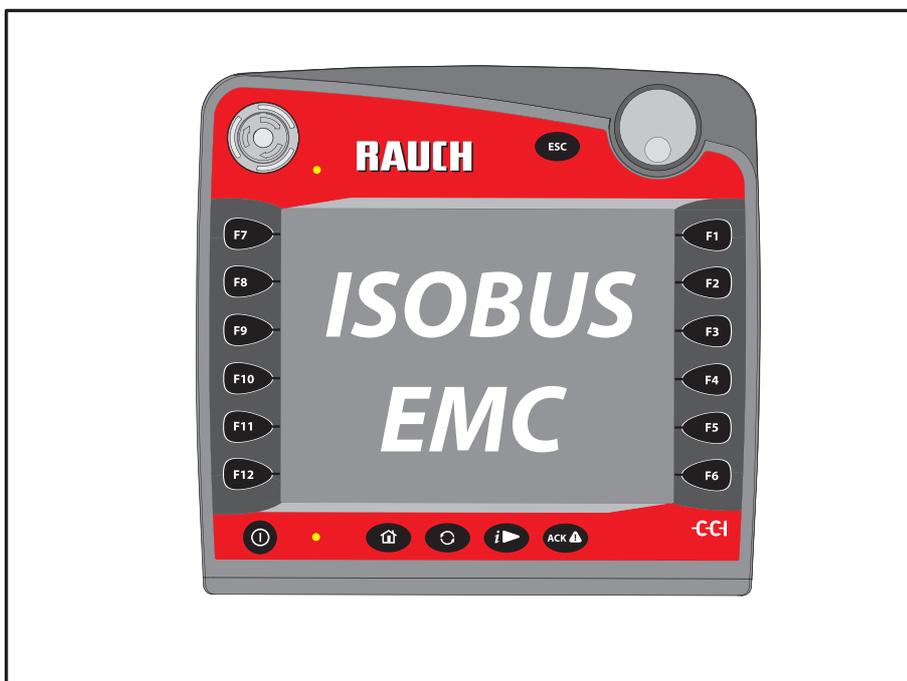


INSTRUCTION MANUAL



**Please read carefully
before using the
machine.**

Keep for future reference.

This instruction manual/assembly instruction is to be considered as part of the machine. Suppliers of new and second-hand machines are required to document in writing that the instruction manual/assembly instruction was delivered with the machine and handed over to the customer.

AXMAT DUO

Version 3.21.00

Original instructions

5902878-**b**-en-0419

Preface

Dear Customer,

By purchasing the AXMAT **special equipment** 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 of unexpected problems: Our Customer Service is always ready to help.



Please read this operator's manual and the operator's manual for the machine carefully before operating the control unit and follow all instructions.

This manual may also describe equipment that is not included in your **special equipment**.

Please note that damage caused by incorrect operation or improper use is not covered by warranty claims.

Technical improvements

We are continuously improving our products. Therefore, we reserve the right to make any improvements and changes to our machine that we consider necessary without notice. This constitutes no 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

Preface

1	User instructions	1
1.1	On this operating manual.	1
1.2	Significance of warnings	1
1.3	Instructions and procedures	3
1.4	Listings.	3
1.5	References	3
1.6	Menu hierarchy, keys and navigation	3
2	Layout and function	5
2.1	Overview of supported AXIS fertiliser spreaders	5
2.2	Function	5
2.3	Structure	6
3	Settings	7
3.1	Minimum requirements	7
3.2	Navigation within the menu	8
3.3	Fertiliser settings	9
3.3.1	Application rate	11
3.3.2	Working width.	11
3.3.3	Spreading disc type	11
3.3.4	Normal disc speed	12
3.3.5	Fertiliser class	12
3.3.6	Fertiliser charts.	13
3.4	Machine settings	16
3.4.1	Activating the AXMAT- function	16

4	Operating the AXMAT system	17
4.1	Preparing for calibration	18
4.1.1	Scope of delivery and assembly of the field test set	18
4.1.2	Requirements and conditions	19
4.1.3	Performing a spreading test at a working width of 24 m	20
4.1.4	Performing a spreading test at a working width of 24 m or greater	21
4.1.5	Performing a spreading test at a working width of 36 m or greater	22
4.2	AXMAT calibration	24
4.2.1	Evaluate the results and correct if necessary	25
4.2.2	Adjusting the drop point	29
4.3	Test/diagnostics	30
4.4	Operating the AXMAT function in spreading operation	32
5	Alarm messages and possible causes	33
5.1	Meaning of the alarm messages	33
5.2	Failure/alarm	34
5.2.1	Acknowledging an alarm message	34
	Index	A
	Terms/conditions of warranty	

1 User instructions

1.1 On this operating manual

This operating manual is an **integral part** of the **machine control unit**.

The operating manual contains important information for **safe, appropriate** and economic **use** and **maintenance** of the machine control unit. Adherence to the manual helps to **avoid dangers**, reduce repair costs and downtime, and increases the machine's reliability and service life.

The operator's manual must be kept in an easily accessible location close to where the machine control unit is used (e. g. on the tractor).

The operating manual does not replace your **own responsibility** as the operator and operating personnel of the control unit.

1.2 Significance of warnings

The warning instructions in this manual have been structured according to the degree of danger and the probability of their occurrence.

Danger signs and symbols inform the user about other construction-related and unavoidable residual risks that may be encountered when operating the machine. The warning notes used are structured as follows:

Signal word	
Symbol	Explanation
Example	
▲ DANGER	
	<p>Risk to life if warning is not observed</p> <p>Description of the danger and possible consequences.</p> <p>Ignoring these warnings will result in very serious or even fatal injury.</p> <p>▶ Measures to prevent the danger.</p>

Warning severity level

The degree of danger is indicated by the signal word. The levels 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 persons.

Ignoring these warnings will result in very serious or even fatal injury.

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

▲ WARNING



Type and source of danger

This warning warns of a possible dangerous situation for the health of persons.

Ignoring these warnings will result in very serious 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 or of material and environmental damage.

Ignoring this warning can result in injuries and damage to the product or the general area.

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

NOTICE

General information containing application tips and particularly useful information, but which constitutes neither warnings nor hazards.

1.3 Instructions and procedures

Steps that the operator must carry out are shown as a numbered list.

1. Instruction for action step 1
2. Instruction for action step 2

Instructions involving only one step are not numbered. The same applies for action steps that do not have a specific sequence.

A bullet is placed in front of these instructions:

- Handling instruction

1.4 Listings

Listings without a specific sequence are shown with bullet points (level 1) and dashes (level 2):

- Property A
 - Point A
 - Point B
- Property B

1.5 References

References to other text passages in the document are indicated with section number, headline text and page number:

- **Example:** See also Chapter [3: Settings, page 7](#).

References to other documents are indicated as note or instruction without exact chapter or page number:

- **Example:** Please also observe the instructions contained in the manual for the universal drive shaft.

1.6 Menu hierarchy, keys and navigation

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

In the menus, **submenus and/or menu items** are listed in which settings can be implemented (selection lists, text or number entries, starting a function).

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

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

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

2 Layout and function

2.1 Overview of supported AXIS fertiliser spreaders

The AXMAT is installed on fertiliser spreaders of the AXIS series at working widths of 18 m or greater.

- AXIS-H 50.2 EMC + W
- AXIS-H 50.1 EMC + W (AXMAT Version 4.10.13 for TEEJET job computer)

NOTICE

The menu entries on the display can appear in different menu windows, depending on the version of the machine control unit used. However, the specified paths remain the same for all machine control unit versions.

2.2 Function

The AXMAT special equipment is used for monitoring the distribution of fertiliser during spreading operation. The cross-distribution on each spreading side is optimised by adjusting the respective drop point based on regulation values.

NOTICE

Correct functionality of the AXMAT is no longer ensured at a high degree of humidity in the sensor housing.

- Deactivating the function; see [3.4.1: Activating the AXMAT- function, page 16](#).

2.3 Structure

The AXMAT special equipment consists of the following assemblies:

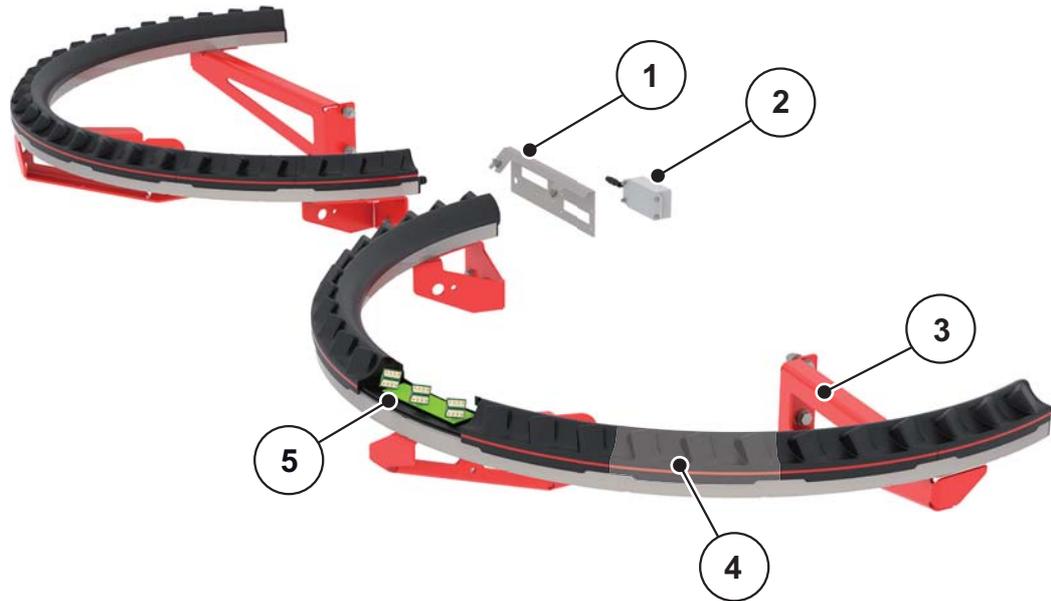


Figure 2.1: AXMAT special equipment

- [1] Communication module holder
- [2] Communication module
- [3] Holder for installation on the machine frame
- [4] 9 sensor modules per spreading side
- [5] 3 sensors per module

3 Settings

3.1 Minimum requirements

Configuration of the AXMAT special equipment is possible when the following conditions are satisfied.

- ISOBUS terminal
- The AXMAT special equipment is enabled and calibrated in the machine control unit by your customer service or specialist technical workshop (Service menu).
- AXIS-H ISOBUS machine control unit of version 4.10.13 or later
- You have positioned the collecting vessels from the Field test set PPS special equipment on your test field.
 - [4.1.3: Performing a spreading test at a working width of 24 m. page 20.](#)

3.2 Navigation within the menu

NOTICE

Important notes regarding the display and the navigation between menus are provided in chapter [1.6: Menu hierarchy, keys and navigation, page 3](#).

In the following sections, we describe calling up the menus or menu items **via touching the touch screen or pressing the function buttons**.

- Observe the operating manual of the terminal used.
-

Accessing the main menu



- Press the **Operating screen/Main menu** function button.
 - ▷ The main menu appears on the display.

Accessing the sub-menu via the touch screen:

1. Press the button of the desired sub-menu.

Windows appear prompting various actions.

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

NOTICE

Not all parameters are displayed simultaneously in one menu window. You can use the **left/right arrow keys** to jump to the adjacent window.

Quitting the menu



- Confirm the settings by pressing the **Back** key.
 - ▷ You return to the **previous menu**.
- Press the **Operating screen/Main menu** button.
 - ▷ This returns you to the **Operating screen**.
- Press the **ESC** button.
 - ▷ The previous settings are retained.
 - ▷ You return to the **previous menu**.

3.3 Fertiliser settings

NOTICE

When the AXMAT function is activated, the **Drop point** menu item is greyed-out and has no function here.

- See ["Activating the AXMAT- function" on page 16.](#)



Default settings

- Open a new fertiliser chart.
- Carry out fertiliser settings.
 - Working width
 - RPM
 - Spreading disc type
 - Fertiliser class

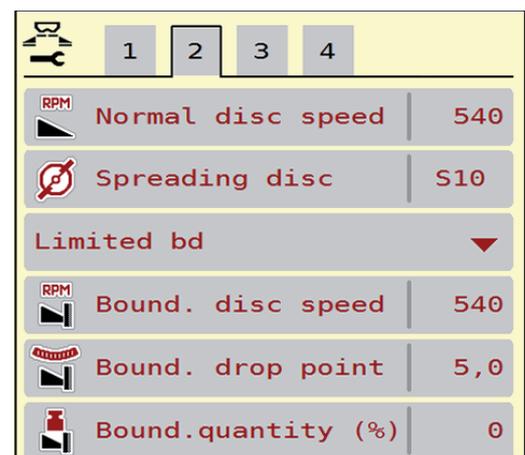
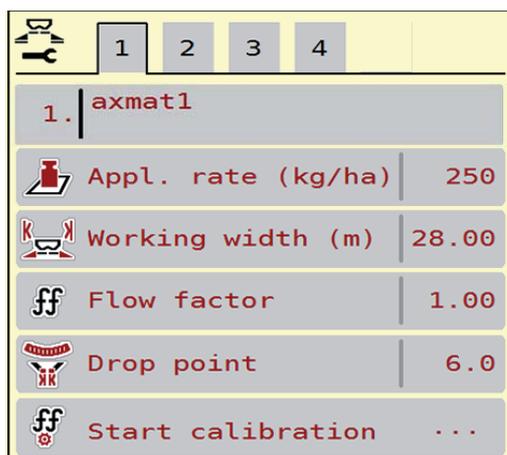


Figure 3.1: Fertiliser settings menu, tab 1 and 2

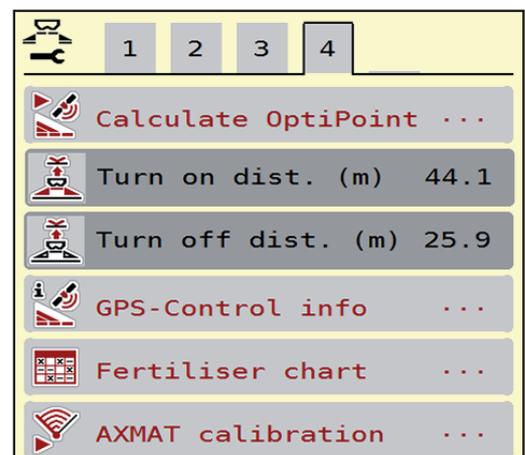
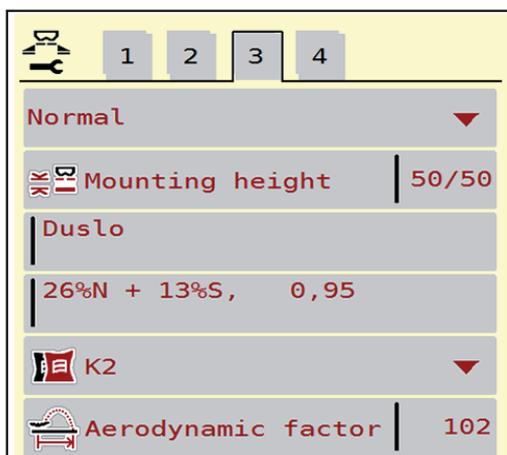


Figure 3.2: Fertiliser settings menu, tab 3 and 4

NOTICE

The main settings for the AXMAT function are described here. Further information on operating the machine control unit is provided in the operating manual provided with the unit.

Submenu	Meaning/possible values	Description
Fertiliser name	Fertiliser selected from the fertiliser chart	Page 13
Appl. rate. (kg/ha)	Input of target value for the application rate in kg/ha	Page 11
Working width (m)	Determination of the working width to be spread	Page 11
Drop point	The drop point cannot be entered when the AXMAT function is activated	
Normal disc speed	Input of the desired spreading disc speed Influences the EMC mass flow control	Page 12
Spreading disc	Setting of the spreading disc type mounted at the mineral fertiliser spreader (influences the EMC mass flow control)	Selection list: <ul style="list-style-type: none"> ● S4 ● S6 ● S8 ● S10 ● S12
Fertiliser class	Selection list	Page 12
Fertiliser chart	Management of fertiliser charts	Page 13
Calibrating AXMAT	Definition of the target values for regulating the drop point during spreading operation	Page 24

3.3.1 Application rate



In this menu, you can enter the target value for the desired application rate.

Entering the application rate:

1. Call up the **Fertiliser settings > Appl.rate. (kg/ha)**.
 - ▷ The display shows the **currently applied** application rate.
2. Enter the new value in the input field.
3. Press **OK**.
 - ▷ **The new value is saved in the machine control unit.**

3.3.2 Working width



In this menu, the working width can be set (in m).

1. Call up the **Fertiliser settings > Working width (m)** menu.
 - ▷ The display shows the **currently applied** working width.
2. Enter the new value in the input field.
3. Press **OK**.
 - ▷ **The new value is saved in the machine control unit.**

3.3.3 Spreading disc type

NOTICE

For **optimal empty run measurement** you must check for correct entries in the **Fertiliser settings** menu.

- The values in the **Disc** and **Normal speed** menu entries must agree with the actual settings of your machine.

The mounted spreading disc type is preset in the control unit at the factory. If you have mounted different spreading discs on your machine, you must enter the correct type in your control unit.

1. Call up the **Fertiliser settings > Spreading disc** menu.
2. Activate the spreading disc type in the selection list.
 - ▷ **The display shows the Fertiliser settings window with the new disc type.**

3.3.4 Normal disc speed

NOTICE

For **optimal empty run measurement** you must check for correct entries in the **Fertiliser settings** menu.

- The values in the **Disc** and **Normal speed** menu entries must agree with the actual settings of your machine.

1. Call up the **Fertiliser settings > Normal speed** menu.
 2. Enter speed in rpm.
- ▷ **The display shows the Fertiliser settings window with the new speed.**

3.3.5 Fertiliser class

If you know the fertiliser class, enter this directly.

If you do not know the fertiliser class of the fertiliser used, you can determine this using the "fertiliser identification system **DIS**" special equipment.

NOTICE

The "fertiliser identification system **DIS**" is available in the **Fertiliser Chart App**.

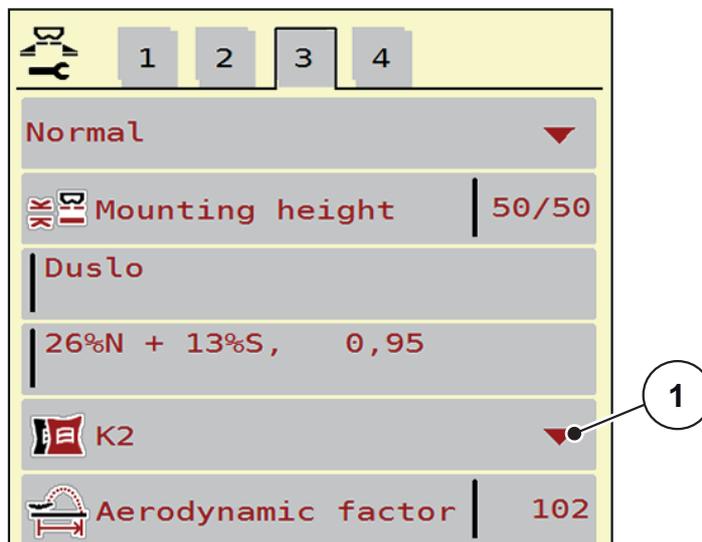
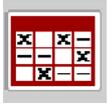


Figure 3.3: Fertiliser settings, page 3

1. Call up the **Main menu > Fertiliser settings** menu.
2. Call up the **Fertiliser class [1]** menu entry.
3. Activate the corresponding fertiliser class in the selection list.



3.3.6 Fertiliser charts



In this menu, you can create and manage your own **fertiliser charts**

NOTICE

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

Creating a new fertiliser chart

You can create up to **30** fertiliser charts in the electronic machine control unit.

1. Call up the **Fertiliser settings > Fertiliser chart** menu.

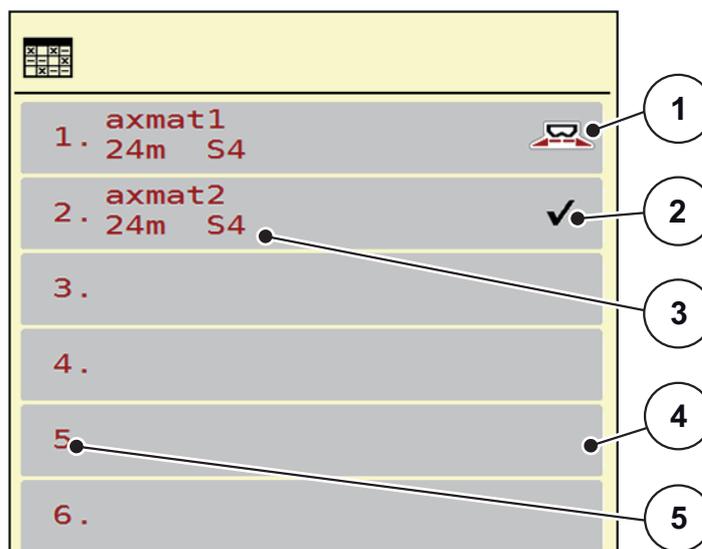


Figure 3.4: Fertiliser charts menu

- [1] Display for an active fertiliser chart
- [2] Display for a fertiliser chart filled with values
- [3] Fertiliser chart name field
- [4] Empty fertiliser chart
- [5] Chart number

2. Select an empty fertiliser chart.
The **Name field** consists of the name of the fertiliser, the working width and the disc type.
 - ▷ The selection window is displayed.
3. Select the **Open and return...** option.
 - ▷ The **Fertiliser settings** menu is displayed, and the selected element is loaded into the fertiliser settings as the **active fertiliser chart**.
4. Call up the **Fertiliser name** menu entry.
5. Enter a name for the fertiliser chart.

NOTICE

We recommend giving the fertiliser chart the name of the fertiliser. This way, specific fertilisers can be assigned to fertiliser charts more easily.

6. Editing the parameters of the **fertiliser chart**.
See chapter [3.3: Fertiliser settings, page 9](#).

Selecting a fertiliser chart:

1. Call up the **Fertiliser settings > Fertiliser chart** menu.
2. Select the desired fertiliser chart.
 - ▷ The selection window is displayed.
3. Select the **Open and return...** option.
 - ▷ **The Fertiliser settings menu is displayed, and the selected element is loaded into the fertiliser settings as the active fertiliser chart.**

NOTICE

Selecting an existing fertiliser chart overwrites all values in the **Fertiliser settings** menu with the values stored in the selected fertiliser chart, including the drop point and normal speed.

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

Copying an existing fertiliser chart

1. Select the desired fertiliser chart.
 - ▷ The selection window is displayed.
2. Select the **Copy element** option.
 - ▷ **A copy of the fertiliser chart is now on the first free position of the list.**

Deleting an existing fertiliser chart

NOTICE

The active fertiliser chart **cannot** be deleted.

1. Select the desired fertiliser chart.
 - ▷ The selection window is displayed.
2. Select the **Delete element** option.
 - ▷ **The fertiliser chart is deleted from the list.**

Managing the selected fertiliser chart via the operating screen

You can also manage the fertiliser chart directly via the operating screen.

1. Press the Fertiliser chart [2] button on the touch screen.
 - ▷ The active fertiliser chart is displayed.
2. Enter the new value in the input field.
3. Press **OK**.
 - ▷ **The new value is saved in the machine control unit.**

3.4 Machine settings

NOTICE

The menu entries on the display can appear in different menu windows, depending on the version of the machine control unit used. However, the specified paths remain the same for all machine control unit versions.

3.4.1 Activating the AXMAT- function

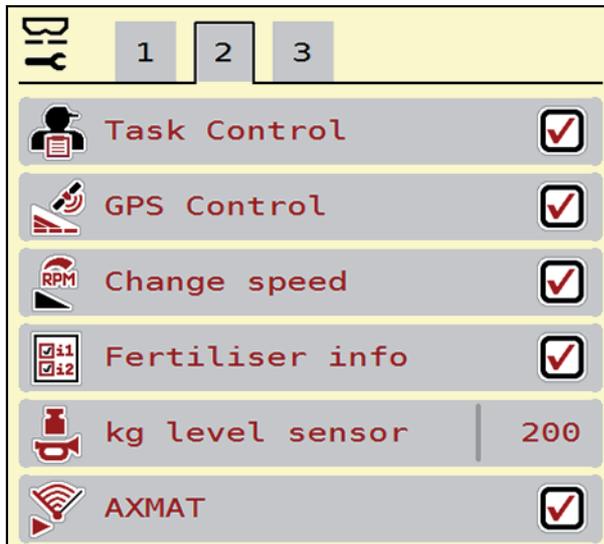


Figure 3.5: Machine settings, page 3

1. Call up the **Main menu > Machine settings** menu.



2. Set the **AXMAT** checkbox.

- ▷ The AXMAT function is activated.
- ▷ In the **Fertiliser settings** menu, the **Drop point** menu entry is greyed-out: manual entry is not possible.

NOTICE

In the case of an error, the function is automatically deactivated. You must set the checkbox again in order to reactivate the function.

3. Clear the **AXMAT [3]** checkbox.

- ▷ The AXMAT function is deactivated.

4 Operating the AXMAT system

⚠ CAUTION



Risk of injury caused by ejected fertiliser

In the event of a fault, the metering slide may open unexpectedly when driving to the spreading location. There is a risk of slipping and personal injury due to ejected fertiliser.

- ▶ Be sure to always switch off the electronic machine control unit **before driving to the spreading location.**

NOTICE

The operating manual describes the functions of the machine control unit **as of software version 3.21.00.**

NOTICE

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

Please be particularly aware of the specifics of the EMC function for the following menu items:

- In the **Fertiliser settings** menu
 - Spreading disc. See [Page 11](#).
 - Disc speed. See [Page 12](#).
- In the **Machine settings** menu
 - AUTO/MAN mode. See the machine control unit operating instructions.

4.1 Preparing for calibration

You use the field test set to calibrate the AXMAT unit in the machine control unit.

4.1.1 Scope of delivery and assembly of the field test set

NOTICE

For calculating the settings for unlisted fertiliser types, please also see the supplementary manual for the practice test kit.

Scope of delivery

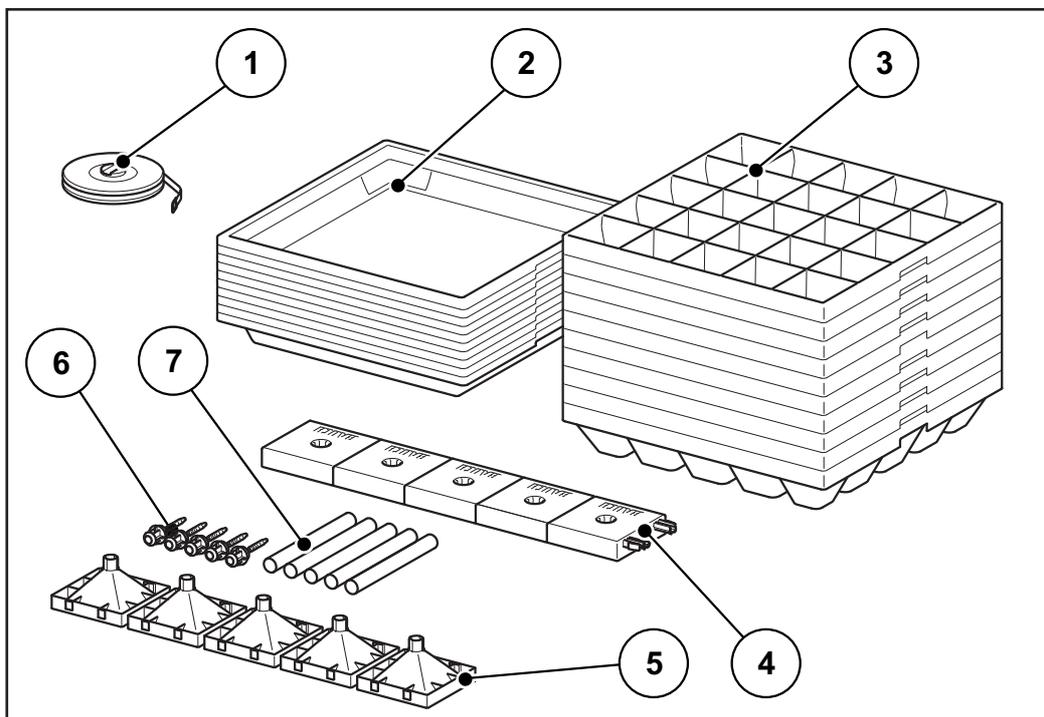
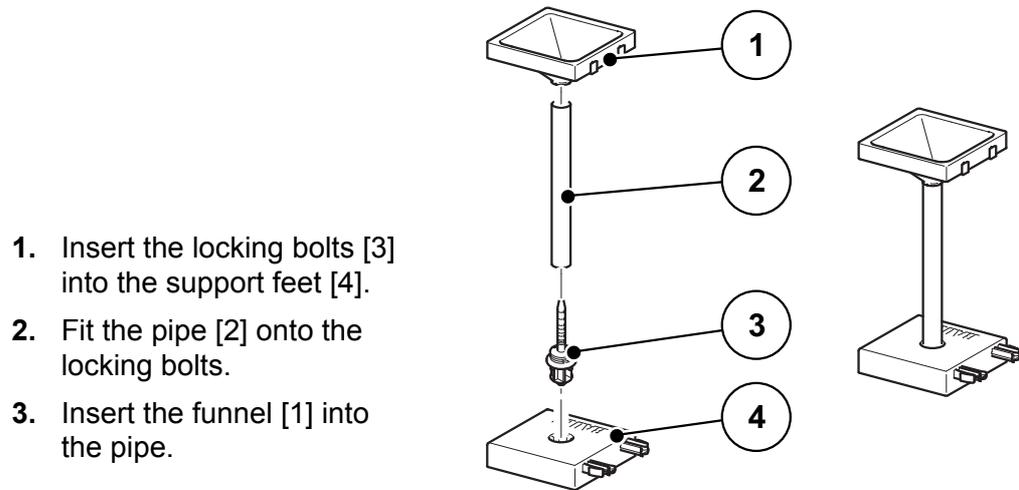


Figure 4.1: Scope of delivery of the field test set

- [1] Tape measure, 1 piece
- [2] Plastic bowls, 10 pieces
- [3] Plastic inserts, 10 pieces
- [4] Support feet, 5 pieces
- [5] Funnels, 5 pieces
- [6] Locking bolts, 5 pieces
- [7] Pipes, 5 pieces

Assembling the measuring tubes



1. Insert the locking bolts [3] into the support feet [4].
2. Fit the pipe [2] onto the locking bolts.
3. Insert the funnel [1] into the pipe.

Figure 4.2: Assembling the measuring tubes

4.1.2 Requirements and conditions

NOTICE

Observe these conditions to ensure that the results are as accurate as possible.

- Conduct the test on a **dry day, with no wind**, so the weather will not influence the result.
- We recommend a testing area that is horizontal in both directions. The tracks must **not** have any significant **cavities** or **heights** since this may distort the spreading pattern.
- Carry out the test either on freshly mown grass or on a field with low vegetation (max. 10 cm).

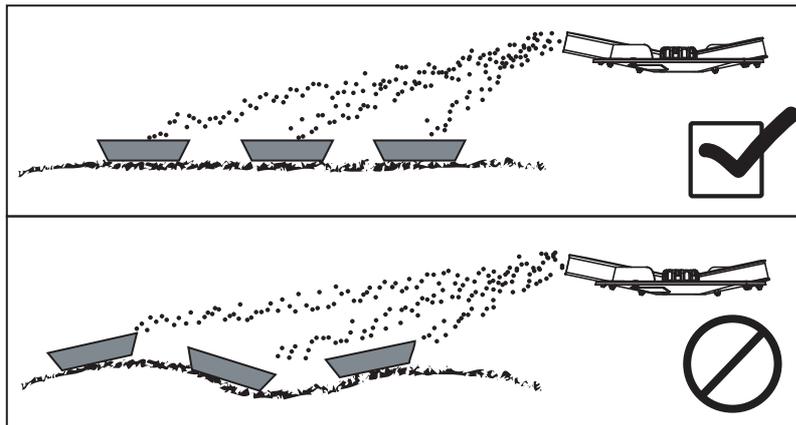


Figure 4.3: Layout of the collecting vessels

- Make sure that the collecting vessels are placed on level ground. Collecting vessels set at an angle can cause measuring errors (see figure above).
- Perform a calibration test (see the operating manual of your fertiliser spreader).
- Adjust and lock the metering slides on the right and left-hand side (see the operating manual of your fertiliser spreader).

4.1.3 Performing a spreading test at a working width of 24 m

NOTICE

We recommend the layout plan up to a spreading width of **24 m**. Layout plans for larger working widths are provided in chapters [\[4.1.4\]](#) and [\[4.1.5\]](#).

- Test area length of 60 - 70 m

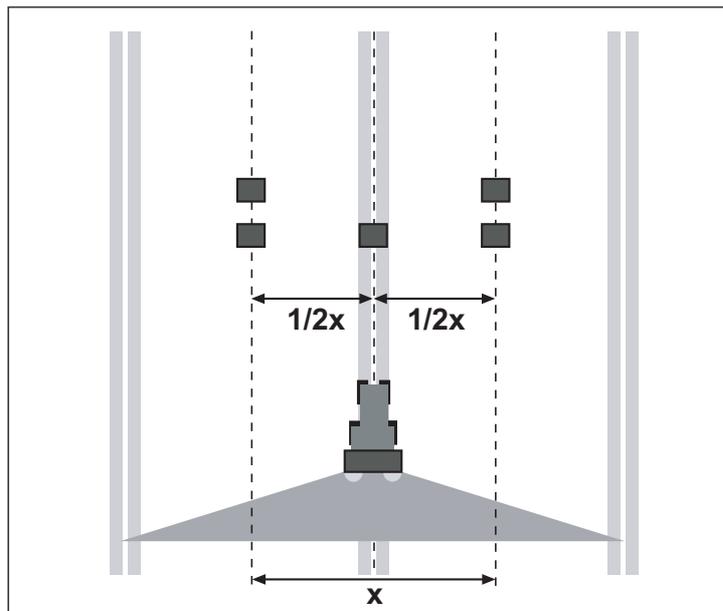


Figure 4.4: Layout for one passage

Preparing one pass:

- Set the mounting height of the machine as specified in the fertiliser chart. Make sure that the mounting height includes the top edge of the trays.
- Check the spreading elements (spreading discs, spreader vanes, outlet) for correct functioning and completeness.
- Place two collecting vessels one after another at a distance of **1 m** in the overlap zones (between the tramlines) and one collecting vessel in the track (according to [Figure 4.4](#)).

Run the spreading test with the openings set as calculated for the job:

- See [4.2: AXMAT calibration, page 24](#).

NOTICE

If the quantity collected in the collecting vessels is insufficient, repeat the passage. Do not change the adjustment of the metering slides.

4.1.4 Performing a spreading test at a working width of 24 m or greater

- Place all 10 collecting vessels evenly spaced as shown in the sketch. Place 2 collecting vessels each in the middle of the tramline, in the overlapping zone and centrally between these positions.

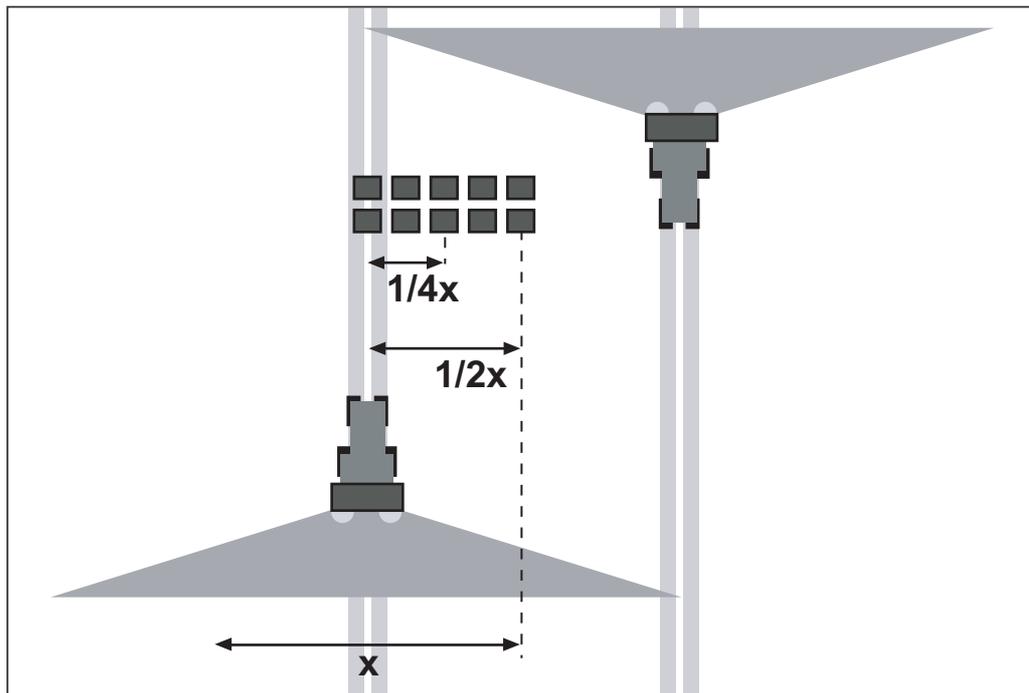


Figure 4.5: Cross-distribution

- Adjust the attachment height of the spreader on the left and right hand sides according to the information in the fertiliser chart. Note that the attachment height relates to the upper edge of the collecting vessels.
- Check the spreading elements (spreading discs, spreader vanes, outlet) for correct functioning and completeness.

Run the spreading test with the openings set as calculated for the job:

- See [4.2: AXMAT calibration, page 24](#).

NOTICE

If the quantity collected in the collecting vessels is insufficient, repeat the passage.

Do not change the adjustment of the metering slides.

- Pour the contents of the collecting vessels into the measuring tubes from the left-hand side. The quality of the horizontal spreading pattern can now be simply read off the 5 inspection glasses.

4.1.5 Performing a spreading test at a working width of 36 m or greater

- Place all 9 collecting vessels evenly spaced as shown in the sketch. Place 1 collecting vessel each in the middle of the tramline, in the overlapping zone and centrally between these positions.

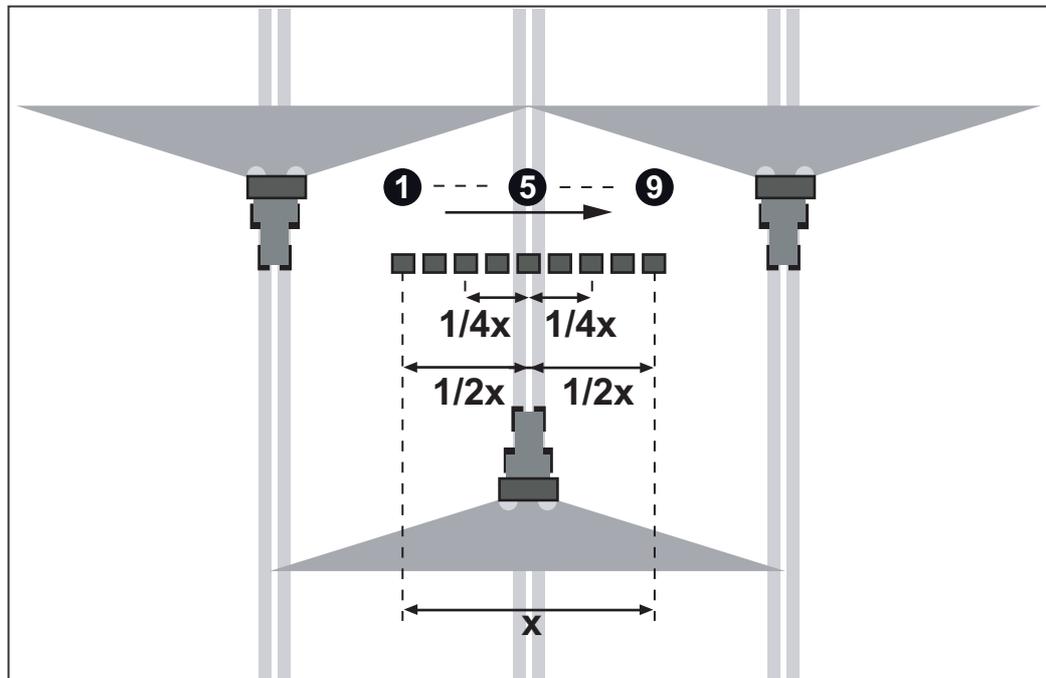


Figure 4.6: Cross-distribution

- Adjust the attachment height of the spreader on the left and right hand sides according to the information in the fertiliser chart. Note that the attachment height relates to the upper edge of the collecting vessels.
- Check the spreading elements (spreading discs, spreader vanes, outlet) for correct functioning and completeness.

Run the spreading test with the openings set as calculated for the job:

- See [4.2: AXMAT calibration, page 24](#).

NOTICE

If the quantity collected in the collecting vessels is insufficient, repeat the passage.

Do not change the adjustment of the metering slides.

If you only have 5 measuring tubes, proceed as follows:

1. Pour the contents of the first 5 collecting vessels into the measuring tubes from the left-hand side.
2. Note the values of the measuring tubes.
3. Empty the measuring tubes and pour the contents of the next 4 collecting vessels into the measuring tubes from the left-hand side.
4. Note the values of the measuring tubes.

NOTICE

You can obtain additional measuring tubes from your dealer.

4.2 AXMAT calibration

Perform calibration of the AXMAT function under the following conditions:

- You are using the AXMAT special equipment for the first time.
- You have entered new settings in the **Fertiliser settings** menu:
 - Fertiliser type
 - Spreading disc type
 - Disc speed
 - Working width
- The desired application rate has changed greatly.



1. Call up the **Main menu > Fertiliser settings** menu.
2. Call up the **AXMAT Calibration** menu entry.
3. Determine the position for the drop point using the fertiliser chart.
4. Enter the determined value in the input field.
5. Press **OK**.



6. Press **Spreading disc start**.
7. Press **Start/Stop**.

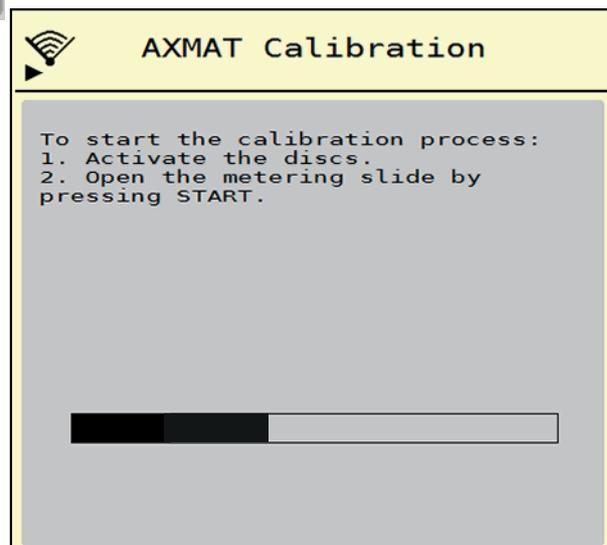


Figure 4.7: Performing AXMAT calibration

8. Perform test spreading over the positioned collecting vessels.

See [4.1.3: Performing a spreading test at a working width of 24 m, page 20](#).

- ▷ Calibration starts after 6 seconds.
- ▷ The display shows the progress bar.

Calibration and the spreading operation must be performed simultaneously.

Continue driving until the progress bar is complete and the collecting vessels have been completely driven over with the spreading pattern.



9. Press Start/Stop.

- ▷ Close the metering slide.
- ▷ The machine control unit switches to the next calibration window.

10. Press Spreading disc start.

- ▷ The spreading discs stop.

11. Check the results of the spreading test.

See [4.2.1: Evaluate the results and correct if necessary. page 25.](#)

4.2.1 Evaluate the results and correct if necessary

Results with 5 or 10 collecting vessels (working width up to 36 m)

- Pool the contents of the collecting vessels placed one after another and pour them into the measuring tubes from the left-hand side.
- Read the quality of the horizontal spreading pattern via the filling levels of the measuring tubes.

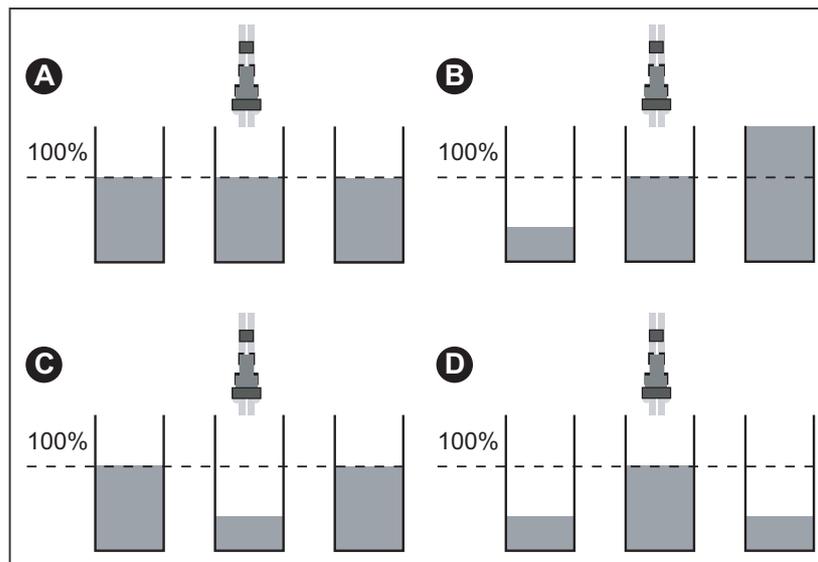


Figure 4.8: Possible results

- [A] All measuring tubes contain the same amount.
- [B] The fertiliser distribution is not symmetrical.
- [C] Too much fertiliser in the overlap zone
- [D] Too little fertiliser in the overlap zone

Examples of spreader setting corrections:

Test result	Fertiliser distribution	Action, test
Case A	Even distribution (admissible deviation ± 1 scale line)	Adjustments are correct.
Case B	Fertiliser quantity decreases from right to left (or vice versa).	Are the same drop points set on the right and left side?
		Is the metering slide setting on the left and right side the same?
		Tramline distances the same?
		Tramlines parallel?
Case C	Too little fertiliser in the centre.	Select earlier drop point setting (e.g. change drop point from 5 to 4).
Case D	Too little fertiliser in the overlap zones.	Select later drop point setting (e.g. change drop point from 8 to 9).

Results with 9 collecting vessels (working width of 36 m or greater)

- Pour the contents of the adjacent collecting vessels into the measuring tubes from the left-hand side.
- Read the quality of the horizontal spreading pattern via the filling levels of the measuring tubes.

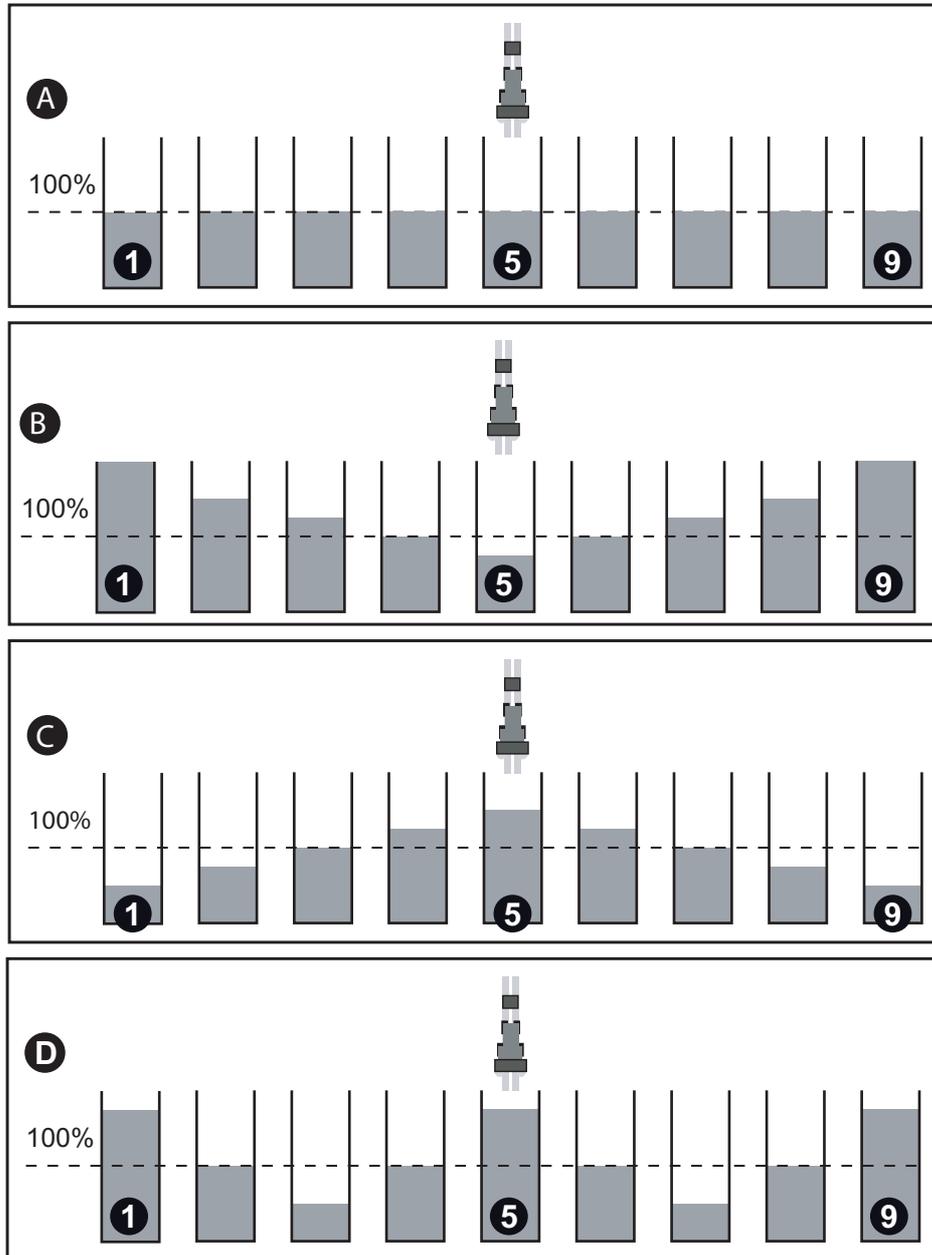


Figure 4.9: Possible results

- [A] All measuring tubes contain the same amount.
- [C] Too much fertiliser in the overlap zone
- [D] Too little fertiliser in the overlap zone
- [B] The fertiliser distribution is not symmetrical.

Examples of spreader setting corrections:

Test result	Fertiliser distribution	Action, test
Case A	Even distribution (admissible deviation ± 1 scale line)	Settings are correct
Case B	Too much fertiliser in the overlap zone.	Select earlier drop point setting (e.g. change drop point from 5 to 4)
Case C	Too little fertiliser in the overlap zones.	Select later drop point setting (e.g. change drop point from 8 to 9).

Fertiliser distribution	Action, test
For spreading result [D]	
at working widths up to approx. 28 - 30 m and when using fertiliser that flies well, large overlapping zones occur (spreading almost to the adjacent tramline). Goal: Triangular spreading pattern	Select a later drop point setting (e.g. change drop point from 9 to 9.5) Increase the disc rotation speed (e.g. change from 900 to 1000 rpm)
Reason: Total spreading width is too small, therefore use a higher rotation speed. The higher rotation speed ejects the fertiliser from the disc earlier, therefore the drop point must be delayed.	
At working widths of approx. 28 m and greater and when using fertiliser that does not fly so well, smaller overlapping zones occur (spreading just to the adjacent tramline). Goal: Trapezium spreading pattern	Select earlier drop point setting (e.g. change drop point from 11.5 to 11) Decrease the disc rotation speed (e.g. change from 1200 to 900 rpm)
Reason: Total spreading width is too large, therefore use a lower rotation speed. The lower rotation speed ejects the fertiliser from the disc later, therefore the drop point must occur earlier.	
At working widths of approx. 24 m or greater, and when using fertiliser that does not fly well, small overlapping zones occur (spreading is somewhat wider than the working width). Goal: Trapezium spreading pattern	Select earlier drop point setting (e.g. change drop point from 9 to 8.5) Decrease the disc rotation speed (e.g. change from 1000 to 800 rpm)
Reason: Total spreading width is too large, therefore use a lower rotation speed. The lower rotation speed ejects the fertiliser from the disc later, therefore the drop point must occur earlier. If the deviations are relatively small, a simple speed reduction without changing the drop point may be sufficient	

4.2.2 Adjusting the drop point

The machine control unit automatically switches to the third calibration window.

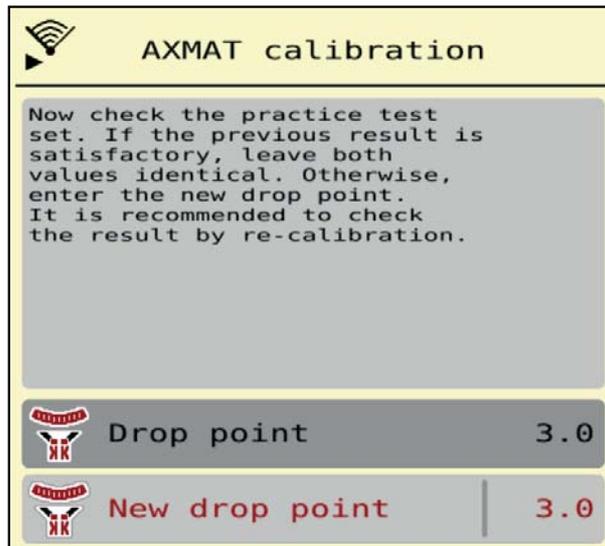


Figure 4.10: Performing AXMAT calibration

1. Determine the drop point.
Press the **OK** button to confirm the **previously saved** drop point.
Press the **New drop point** button to enter a the new drop point.
2. Enter the new drop point value based on the results read and the correction recommendations.

NOTICE

You can enter values in steps of 0.5. The AXMAT function regulates the drop point in steps of 0.1 during spreading operation.

3. Press **OK**.
4. Drive over the area again to check the adjusted value.
You have previously emptied the collecting vessels.
 - ▷ **The drop point is stored in the fertiliser chart.**
 - ▷ **The AXMAT system is calibrated and functional.**

4.3 Test/diagnostics



The **Test/Diagnosis** allows you to check the functionality of all actuators and sensors.

1. Call up the **Main menu > System / Test > Test / diagnostics** menu.

NOTICE

This menu is for information purposes only.
The list of sensors depends on the equipment of the machine.

CAUTION



Risk of injury caused by moving machine parts.

During the tests, machine parts may start to move automatically.
▶ Ensure that there is no one in the vicinity of the machine before carrying out the tests.

2. Call up the **Test/diagnostics > AXMAT-Sensor status** menu.
▶ **The display shows the status of the sensors.**

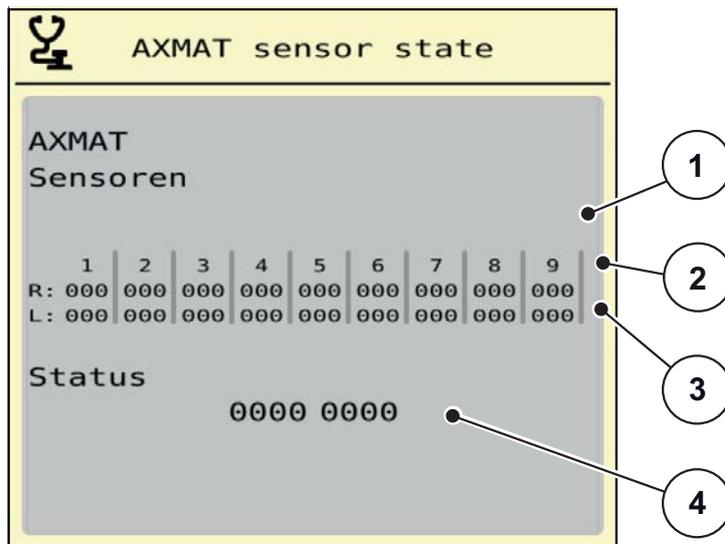


Figure 4.11: Test/diagnostics; example: AXMAT sensor status

- [1] Number of the sensor module
- [2] Status display of the individual sensors, right spreading side as seen in the driving direction
- [3] Status display of the individual sensors, left spreading side as seen in the driving direction
- [4] Error codes

Status message from sensors [2] and [3]

- 0 = OK; no equipment error
- 1 = Error

NOTICE

The AXMAT function is automatically deactivated when more than 3 sensors exhibit an error.

- Contact your specialist technical workshop or customer service.
- After the error has been correct, set the checkbox in **Machine settings > AXMAT** again.
 - The AXMAT function is now active again.

**Error code [4]**

- Contact your dealer or specialist technical workshop. They will help you in correcting the error.

4.4 Operating the AXMAT function in spreading operation

NOTICE

The AXMAT function regulates the drop point in steps of 0.1 during spreading operation.

Prerequisites:

- The AXMAT function is enabled. See [4.1: Preparing for calibration, page 18](#).
- The AXMAT function is activated. See [3.4.1: Activating the AXMAT- function, page 16](#).
- The AXMAT function is calibrated. See [4.2: AXMAT calibration, page 24](#).



1. Press **Spreading disc start**.
▷ The spreading discs start.
 2. Press **Start/Stop**.
▷ The metering slides open.
- ▷ **The AXMAT function automatically regulates the drop point during spreading operation.**

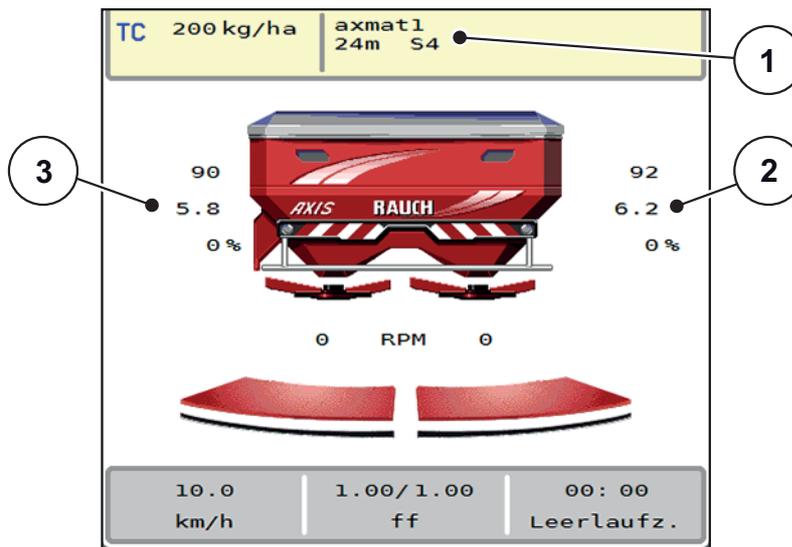


Figure 4.12: Regulating the drop point during spreading operation

- [1] Active fertiliser chart
- [2] Drop point value, right spreading side
- [3] Drop point value, left spreading side

Notes:

- In boundary spreading mode or with section control on a single side, the AXMAT function is deactivated for the side operating with application rate reduction.
- The AXMAT function is reactivated at both sides once you return to the normal spreading mode.

5 Alarm messages and possible causes

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

5.1 Meaning of the alarm messages

No.	Message in display	Meaning and possible cause
17	Error by setting drop point.	The drop point setting cannot reach the target value it is to be moved to. <ul style="list-style-type: none"> ● Fault, for instance with the power supply ● No position feedback
18	Drop point blocked	The drop point setting cannot reach the target value it is to be moved to. <ul style="list-style-type: none"> ● Blockage ● No position feedback ● Calibration test
19	Defect by setting drop point.	The drop point setting cannot reach the target value it is to be moved to. <ul style="list-style-type: none"> ● No position feedback
20	Error on LIN bus participant: [Name].	Communication problem. <ul style="list-style-type: none"> ● Defective cable ● Loose plug connector
32	Externally controlled parts may move. 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. <ul style="list-style-type: none"> ● Follow the displayed instructions only if all risks have been eliminated.
90	Stop AXMAT	The AXMAT function is automatically deactivated and no longer regulates the fertiliser <ul style="list-style-type: none"> ● More than 2 sensors signal an error. ● Communication error

5.2 Failure/alarm

5.2.1 Acknowledging an alarm message

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

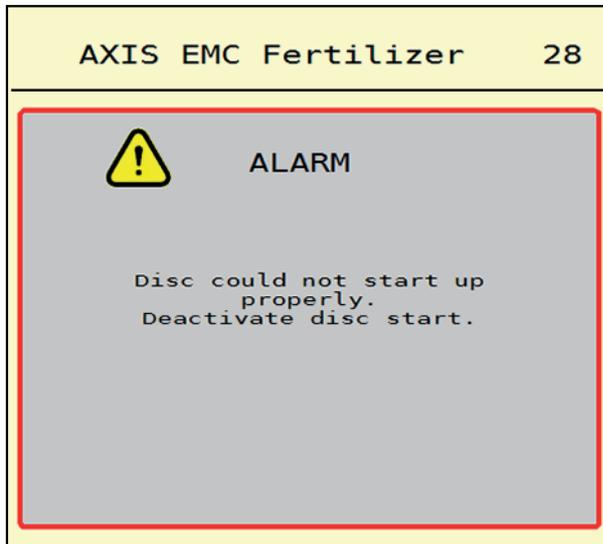


Figure 5.1: Alarm message (example)

Acknowledging an alarm message:

1. Rectify the cause of the alarm message.

Observe the operating manual of the mineral fertiliser spreader and section [5.1: Meaning of the alarm messages, page 33](#).

2. Press the **ACK** foil button.



NOTICE

In the case of different ISOBUS terminals, acknowledging the alarm messages may differ.

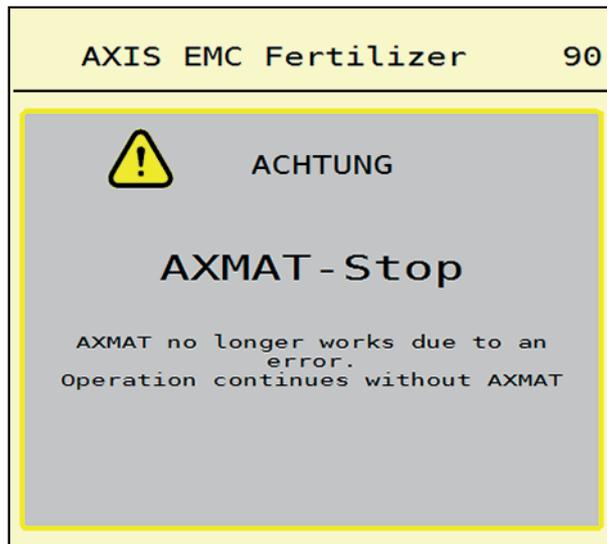


Figure 5.2: Alarm message (example)

You can use various keys to acknowledge other messages with a yellow frame:

- Enter
- Start/stop

For this purpose, follow the instructions on screen.

Index

A

- Alarm message
 - Acknowledging 34
 - List 33

Application rate 10–11

AXIS fertiliser spreaders 5

AXMAT

- Activation 16
- Calibration 24–29
- Function 5
- Structure 6

C

Calibrate AXMAT 10

Calibration 24–29

- Preparation 18

Communication module 6

D

Drop point 10

- Adjusting 29

F

Fertiliser

- Class 12

Fertiliser chart 10

- Create 15

Fertiliser charts 13

Fertiliser class 10, 12

Fertiliser settings 9–15, 17

- Application rate 10–11
- Drop point 10
- Fertiliser chart 15
- Fertiliser charts 13
- Fertiliser class 12
- Normal disc speed 12
- Spring disc 10–11
- Working width 10–11

Field test set 18

I

Idle measurement 11–12

K

Key

- Menu 8

M

M EMC function 11–12, 17

- Spring disc 11

Machine control unit

- Minimum requirements 7

Machine settings 16–17

Main menu

- Fertiliser settings 9
- Machine settings 16
- Menu button 8
- Test/diagnostics 30

Menu

- Navigation 3, 8

N

Normal disc speed 12

R

RPM 12

S

Sensor 6

Sensor module 6

Sensor status 30

Settings 7–16

Spreading disc 11

- Speed 12
- Type 10

Spreading test

- Prerequisites 19
- Results 25
- Working width of 24 m or greater 21
- Working width of 36 m or greater 22
- Working width up to 24 m 20

T

Test/diagnostics 30–31

- Sensor status 30

W

Working width 10–11

Terms/conditions of warranty

RAUCH units are manufactured with modern production methods and with the greatest care and are subject to numerous inspections.

Therefore RAUCH offers a 12-month warranty subject to the following conditions:

- The warranty begins on the date of purchase.
- The warranty covers material and manufacturing faults. Our liability for third-party products (hydraulic system, electronics) is limited to the warranty of the manufacturer of the equipment. During the warranty period, manufacturing and material faults are corrected free of charge by replacement or repair of the affected parts. Other rights extending beyond the above, such as claims for conversion, reduction or replacement for damages that did not occur in the object of supply are explicitly excluded. Warranty services are provided by authorised workshops, by RAUCH factory representatives or the factory.
- The following are excluded from coverage by the warranty: natural wear, dirt, corrosion and all faults caused by improper handling and external causes. The warranty is rendered void if the owner carries out repairs or modifications to the original state of the supplied product. Warranty claims are rendered void if RAUCH original spare parts were not used. Therefore, the directions in the operating manual must be observed. In all cases of doubt contact our sales representatives or the factory directly. Warranty claims must be submitted to the factory by 30 days at the latest after occurrence of the problem. The date of purchase and the serial number must be indicated. If repairs under the warranty are required, they must be carried out by the authorised workshop only after consultation with RAUCH or the company's appointed representatives. The warranty period is not extended by work carried out under warranty. Shipping faults are not factory faults and therefore are not part of the warranty obligation of the manufacturer.
- No claims for compensation for damages that are not part of RAUCH machines themselves will be accepted. This also means that no liability will be accepted for damage resulting from spreading errors. Unauthorised modifications of RAUCH machines may result in consequential damage, for which the manufacturer will not accept any liability. The manufacturer's liability exclusion will not apply in case of wilful 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. It will also not apply in the event that assured properties are absent, if the purpose of the assured properties was to protect the purchaser against damage that does not involve the supplied product itself.

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RAUCH Fertilizer Chart
Tableaux d'épandage RAUCH
Tabele wysiewu RAUCH
RAUCH Strooitabellen
RAUCH Tabella di spargimento
RAUCH Spredetabellen
RAUCH Levitystaulukot
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<http://www.rauch-community.de/streutabelle/>



RAUCH Landmaschinenfabrik GmbH

 Landstraße 14 · D-76547 Sinzheim

 Victoria-Boulevard E200 · D-77836 Rheinmünster



info@rauch.de · www.rauch.de

Phone +49 (0) 7221/985-0

Fax +49 (0) 7221/985-200