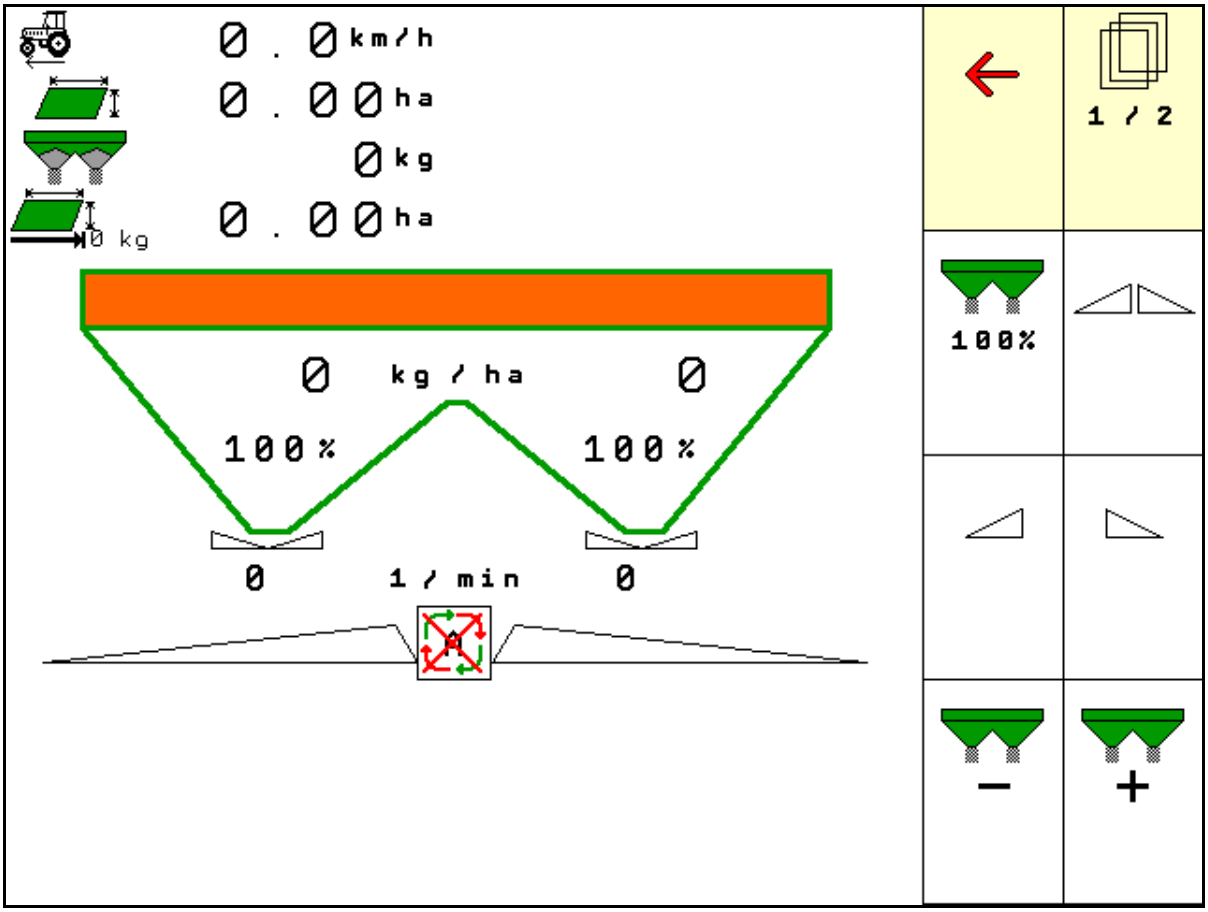
Operating Manual

AMAZONE

Software ISOBUS

for

ZA-TS ZG-TS



Please read and follow this operating manual before putting the machine into operation.
Keep it in a safe place for future use!

MG4143
BAG0095.7 11.14
Printed in Germany

en

Reading the instruction

manual and to adhere to it should not appear to be inconvenient and superfluous as it is not enough to hear from others and to realise that a machine is good, to buy it and to believe that now everything would work by itself. The person concerned would not only harm himself but also make the mistake of blaming the machine for the reason of a possible failure instead of himself. In order to ensure a good success one should go into the mind of a thing or make himself familiar with every part of the machine and to get acquainted with its handling. Only this way, you would be satisfied both with the machine as also with yourself. To achieve this is the purpose of this instruction manual.

Leipzig-Plagwitz 1872. Rud. Sark.

Identification data

Enter the machine identification data here. You will find the identification data on the rating plate.

Machine identification number:
(ten-digit) _____

Type: ISOBUS

Year of manufacture: _____

Basic weight (kg): _____

Approved total weight (kg): _____

Maximum load (kg): _____

Manufacturer's address

AMAZONEN-WERKE

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Spare part orders

Spare parts lists are freely accessible in the spare parts portal at www.amazone.de.

Please send orders to your AMAZONE dealer.

Formalities of the operating manual

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Preface

Dear Customer,

You decided to purchase one of our high quality machines from the comprehensive range of farm machinery produced by AMAZONEN-WERKE, H. DREYER GmbH & Co. KG. We thank you for your confidence in our products.

On receiving the machine, check to see if it was damaged during transport or if parts are missing. Using the delivery note, check that the machine was delivered in full including the ordered special equipment. Replacement will be made only if a claim is filed immediately!

Please read and follow this operating manual - in particular, the safety instructions - before putting the machine into operation. Only after careful reading will you be able to benefit from the full scope of your newly purchased machine.

Please ensure that all the machine operators have read this operating manual before they put the machine into operation.

Should you have any questions or problems, please consult this operating manual or contact your local service partner.

Regular maintenance and timely replacement of worn or damaged parts increases the lifespan of your machine.

User evaluation

Dear Reader,

We update our operating manuals regularly. Your suggestions for improvement help us to create ever more user-friendly manuals. Send us your suggestions by fax.

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1 User information

The "User information" section supplies information on using the operating manual.

1.1 Purpose of the document

This operating manual

- describes the operation and maintenance of the machine.
- provides important information on safe and efficient handling of the machine.
- is a component part of the machine and should always be kept with the machine or the traction vehicle.
- keep it in a safe place for future use.

1.2 Locations in the operating manual

All the directions specified in the operating manual are always viewed in the direction of travel.

1.3 Diagrams used

Instructions for action and reactions

Tasks to be carried out by the user are presented as numbered instructions. Always keep to the order of the instructions. The reaction to instructions is given by an arrow.

Example:

1. Instruction for action 1

→ Reaction of the machine to instruction for action 1

2. Instruction for action 2

Lists

Lists without a mandatory sequence a presented as a list with bullet points.

Example:

- Point 1
- Point 2

Item numbers in diagrams

Numbers in round brackets refer to the item numbers in the diagrams. The first digit refers to the diagram; the second digit, to the item number in the illustration.

2 General safety instructions

Knowledge of the basic safety information and safety regulations is a basic requirement for safe handling and fault-free machine operation.

The operation manual

- must always be kept at the place at which the machine is operated!
- must always be easily accessible for the user and maintenance personnel!

2.1 Representation of safety symbols

Safety instructions are indicated by the triangular safety symbol and the highlighted signal word. The signal word (DANGER, WARNING, CAUTION) describes the gravity of the risk and has the following significance:

DANGER

Indicates an immediate high risk, which will result in death or serious physical injury (loss of body parts or long term damage) if not avoided.

If the instructions are not followed, then this will result in immediate death or serious physical injury.

WARNING

Indicates a medium risk, which could result in death or (serious) physical injury if not avoided.

If the instructions are not followed, then this may result in death or serious physical injury.

CAUTION

Indicates a low risk, which could incur minor or medium level physical injury or damage to property if not avoided.

IMPORTANT

Indicates an obligation to special behaviour or an activity required for proper machine handling.

Non-compliance with these instructions can cause faults on the machine or in the environment.

NOTE

Indicates handling tips and particularly useful information.

These instructions will help you to use all the functions of your machine to the optimum.

3 Product description

The ISOBUS software and ISOBUS terminal make it easy to control, operate and monitor the **AMAZONE** fertiliser spreaders.

The ISOBUS software works with the following **AMAZONE** fertiliser spreaders:

- **ZA-TS** with delivery point adjustment, Auto TS boundary spreading system, power take-off or optional hydraulic spreading disc drive
- **ZG-TS** with delivery point adjustment, Auto TS boundary spreading system, power take-off or optional hydraulic spreading disc drive

The Main menu is shown after switching on the ISOBUS terminal when the machine computer is connected.

Adjustments

The settings can be adjusted through the sub-menus in the Main menu.

Operation

The ISOBUS software controls the spread rate according to travel speed.

The Work menu shows all of the spreading data during operation and, depending on the equipment, the machine can be operated through the Work menu.

3.1 Software version

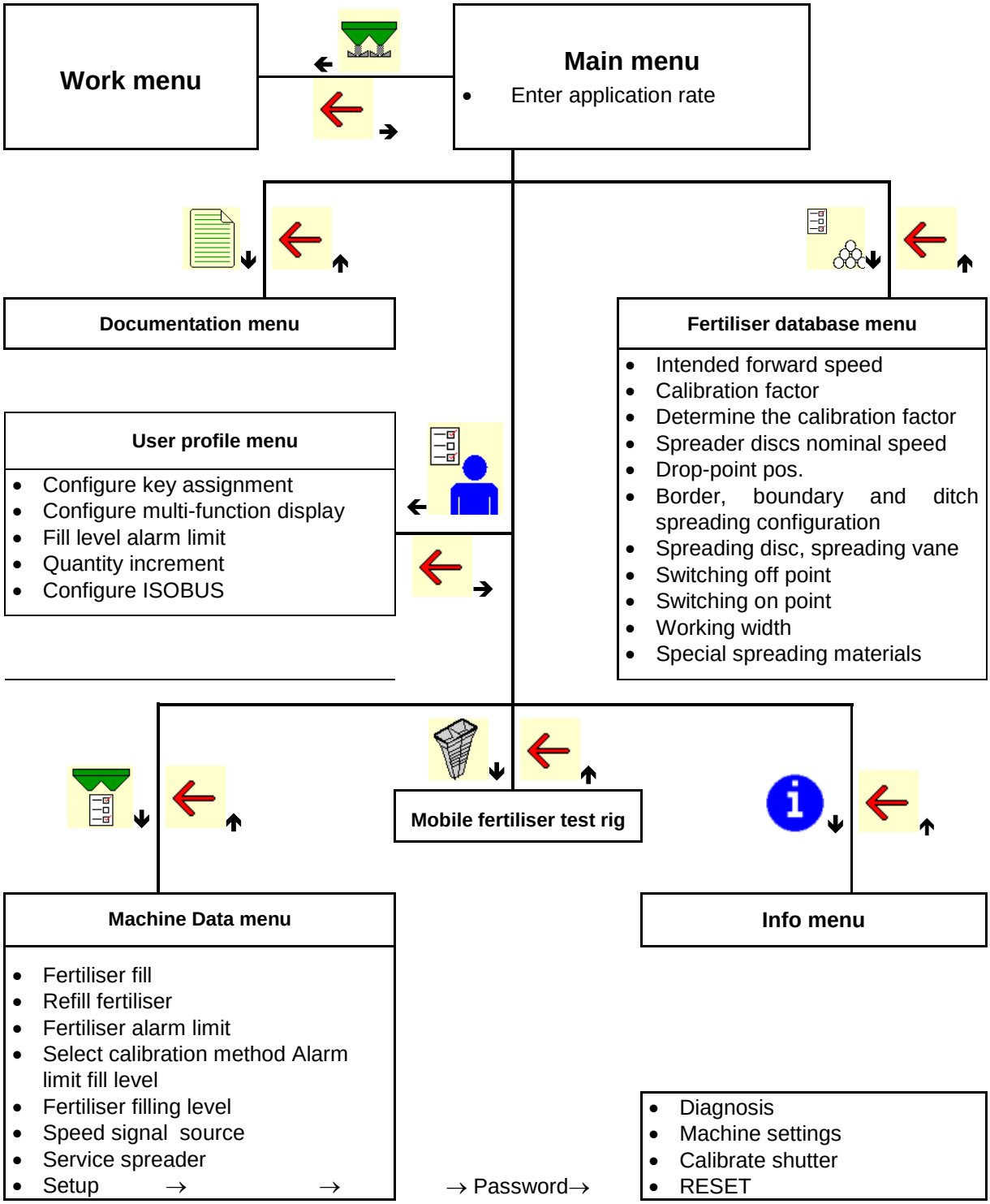
This operating manual is valid from software version:

MHX version: 1.08.01

3.2 Menu navigation layout

-  Back to previous menu
-  Scrolling in the menu

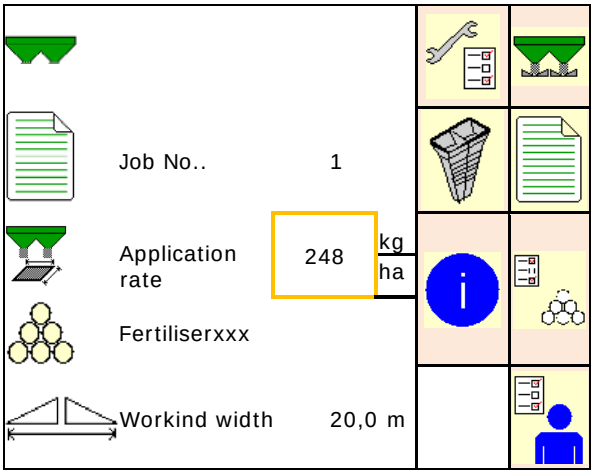
3.3 Hierarchy of the ISOBUS software



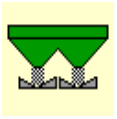
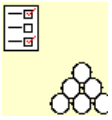
4 Main menu

4.1 Display of the Main menu

- Adjusted machine
- Started job (Only if the Task Controller Client is deactivated.)
- Enter application rate
- Fertiliser selected
- Set working width



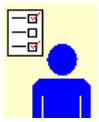
4.2 Sub-menus of the Main menu

-  Work menu
  - Display and operation during work.
-  Documentation menu
  - Saving of areas, times, amounts.
  - The calculated data can be stored for up to 20 documented jobs.
-  Fertiliser menu
  - Entry of the data that are dependent on the fertiliser used.
  - Before each use, determine the calibration factor for the fertiliser to be spread.

On the wighing spreader, you can

- calculate the calibration factor during calibration travel (page 22).

  use online calibration to continuously calculate the calibration value while spreading (page 23).

-  User profile menu
  - Each user can save a personal profile with settings for the terminal and the implement.
-  Machine Data menu
  - Entry of machine-specific or individual data.
-  Mobile fertiliser test rig menu
  - For checking lateral distribution with the mobile test rig. (Refer to the operating manual for the mobile test rig).
-  Info menu
  - Software version and total ground coverage.

5 Manage documentation

Select **Documentation** in the main menu!

The **Documentation** menu is an internal, non-readable job memory.

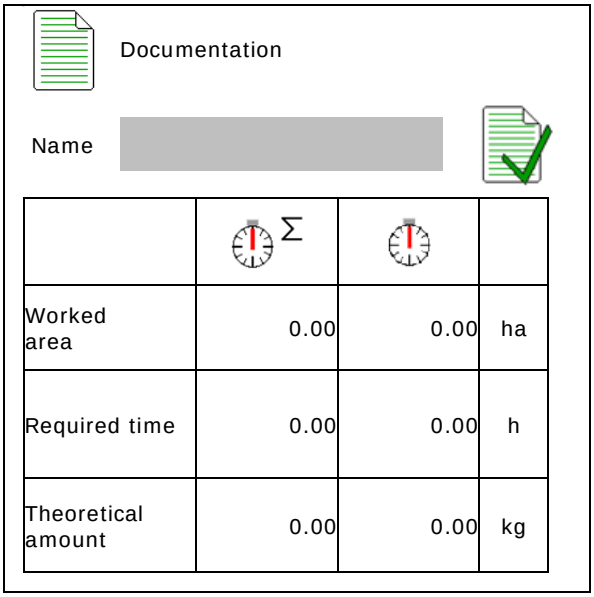
When the documentation menu is opened, the documentation which has been started is shown.

- Overall data display
- Daily data display

To end a documentation process, another must be started.

Up to a maximum 20 documented jobs can be stored.

Before further documented jobs can be created, existing ones must be deleted.



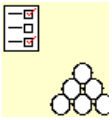
- Create new documentation.

→ Enter the name.

- Start documentation.
- Delete day data.
- Start previously created documentation.
- Start later created documentation.
- Delete documentation.

- One documentation is always started.
- Documentation which has already been stored can be selected and restarted.

6 Enter / determine / manage fertiliser-specific data



Select **Fertiliser** in the main menu!

6.1 The fertiliser calibration factor

Before determining the fertiliser calibration factor:

- Select fertiliser / add new fertiliser.
- Carry out / check settings for the fertiliser.

The fertiliser calibration factor determines the regulating behaviour of the machine computer and is dependent on the flow characteristics of the fertiliser to be spread.

The fertiliser flow characteristics depend on:

- fertiliser storage, storage time and climatic factors.
- working conditions.

The calibration value is determined differently for each spreader.

The table below indicates the pages where the calibration method is described for each spreader.

	ZA-TS		**ZG-TS**	
		Profis		Wiege-technik
Calibrate the fertiliser with the implement at standstill:	see page			
• Calibration via the lateral calibration device	**18**	**18**	**18**	**18**
• Calibration with mounted implement (slug pellets)	**19**	**19**		
Calibrate the fertiliser while driving:				
• Automatically during calibration travel		**22**		**22**
• Online calibration while driving.		**23**		

- The fertiliser flow characteristics may change even after a brief fertiliser storage period.

  Therefore, before each use, re-determine the fertiliser calibration factor of the fertiliser to be spread.
- Always determine the fertiliser calibration factor again if deviations occur between the theoretical and actual spread rates.
- The spread rate entered in the terminal must not exceed a maximum value (dependent on working width, proposed speed and entered calibration factor).

→ The maximum spread rate/ha has been reached when the slider is fully open.

Realistic calibration factors for fertiliser (0.7 to 1.4):

- 0.7 for urea
- 1.0 for calcium ammonium nitrate (CAN)
- 1.4 for fine, heavy PK fertilisers

Application of special spreading material

Special spreading material, rice:

→ The realistic range for the calibration factor is increased from 0 to 2 because of the very different flow characteristics of rice.

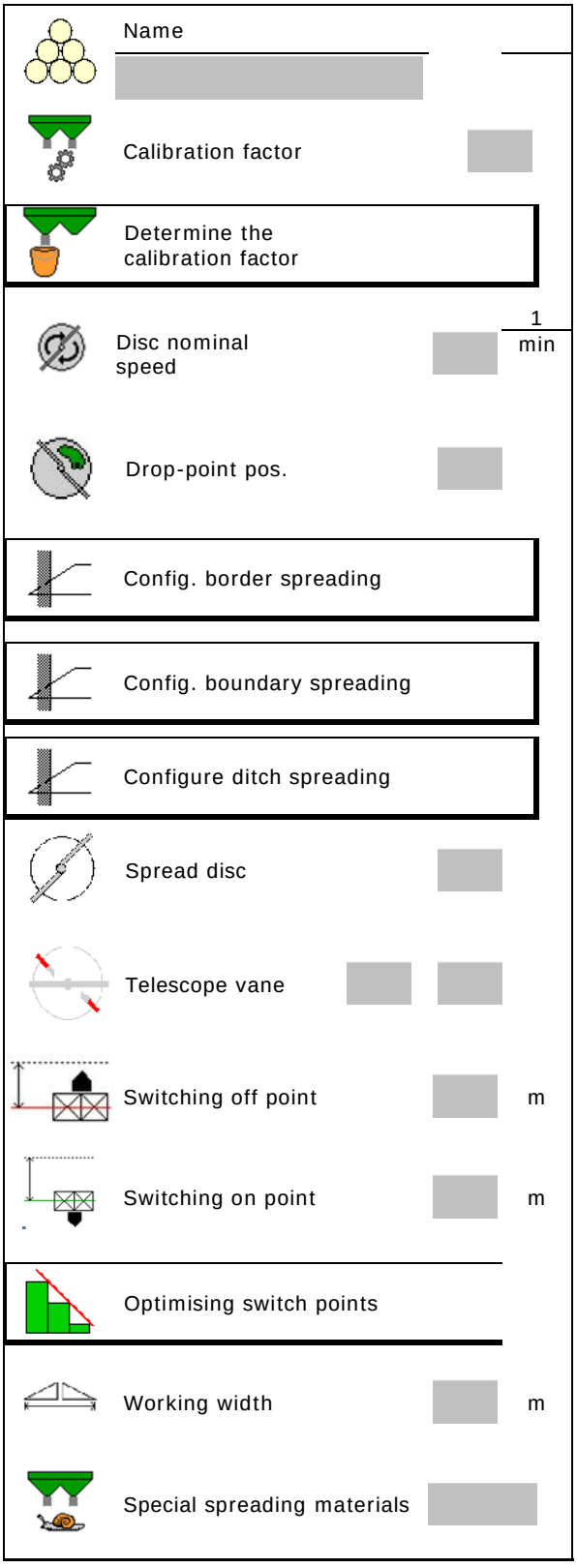
Special spreading material, slug pellets:

→ As a result of a very low application rate, the calibration is carried out directly on the shutter.

6.2 Enter fertiliser data

All fertiliser-specific details can be obtained from the setting chart.

- Enter the name of the fertiliser
- Enter calibration factor for determining exact factor, e.g. 1.00.
- Determine the calibration factor, see page 14.
- Enter the nominal spreading disc speed according to the setting chart.
- ZA-TS, ZG-TS: enter drop-point position according to setting chart.
- Configure the border spreading, see page 26.
- Configure the boundary spreading, see page 26.
- Configure ditch spreading, see page 26.
- Enter the spreading disc (only for data storage, unnecessary for software)
- Telescope vane the spreading disc (only for data storage, unnecessary for software)
- Enter the switching off point.
- Enter the switching on point.
- Optimising switch points, see page 26.
- Check / enter working width
- Select special spreading materials
  - o Off (fertiliser)
  - o Slug pellets
  - o Rice

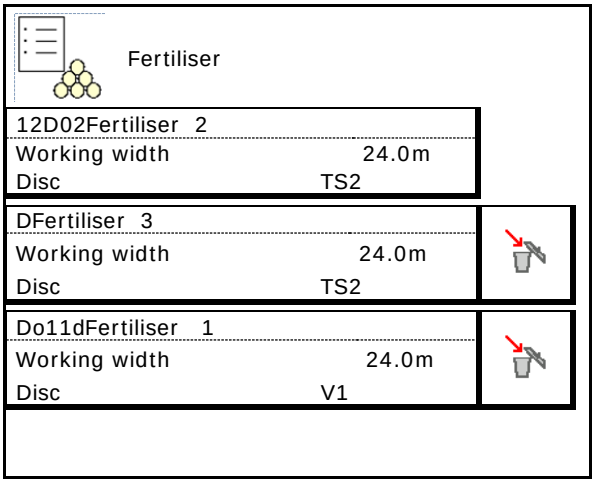


The entry of several fertiliser data (e.g., spreading disc) serves only for data storage and does not replace the setting chart for the respective fertiliser.

6.3 Fertiliser database

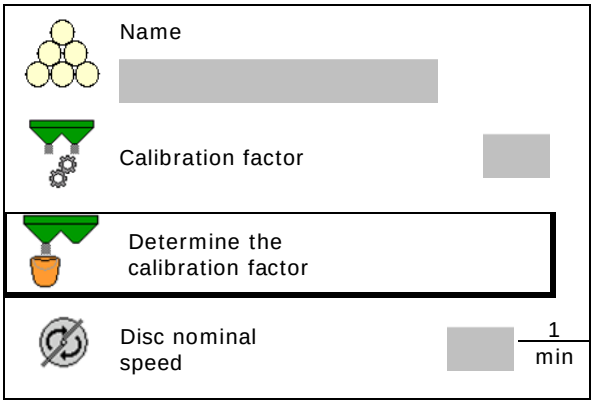
In the fertliser database, up to 20 fertiliser types with software settings and settings at the fertiliser spreader can be saved, edited and displayed.

-  Call up the fertiliser database.
  - o  Add new fertiliser.
  - o  Delete marked fertiliser.



6.4 Calibrate the fertiliser with the implement at standstill

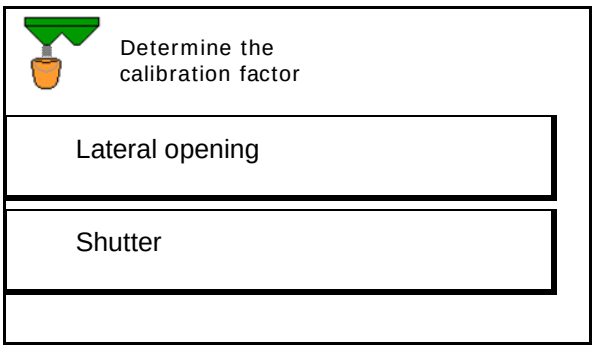
Determine the calibration factor→



Determine the calibration factor via:

Lateral opening (calibration device)

Left slide with calibration chute



The scale used to determine the fertiliser calibration factor at standstill must weigh accurately. Inaccuracies may cause deviations in the actual dispensed quantity.

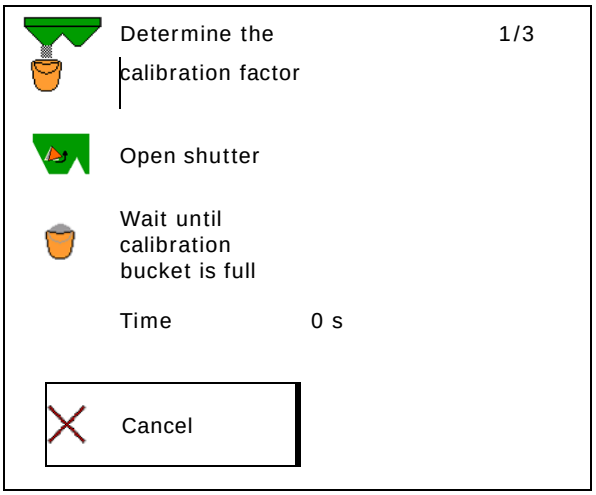
6.4.1 Determining the calibration factor using the lateral calibration device

Before the actual determination of the calibration factor, carry out a test run (without calibration menu) in order to guarantee a continuous flow of fertiliser.

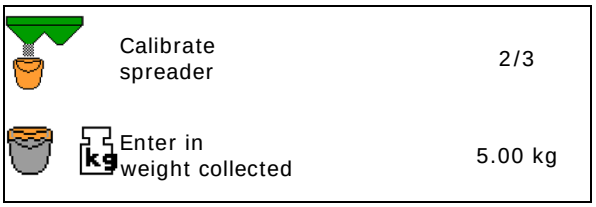
1. Add a sufficient quantity of fertiliser to the hopper.
2. Hang a collection bucket onto the calibration device.
3. Open the discharge of the calibration device via the hand lever.

→ During calibration, the terminal indicates the calibration time in seconds.

4. Close the discharge as soon as the collection bucket is full.

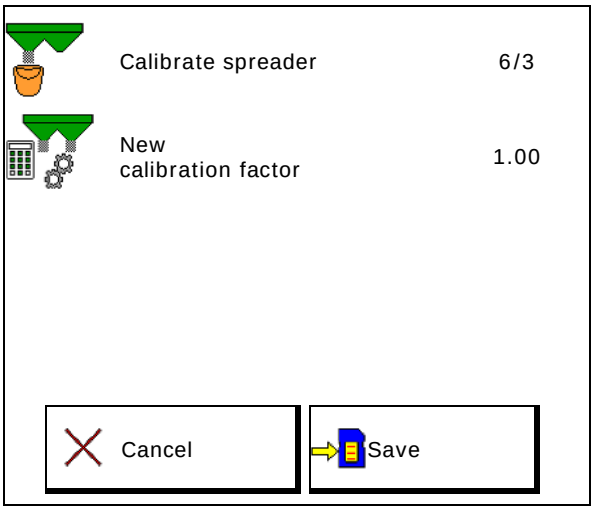


5. Weigh the collected fertiliser (allow for the weight of the collection bucket).
6. Enter amount of weighed fertiliser, pay attention to the units.



→ The new calibration factor will be displayed.

7. Store the calibration factor or abort calibration.

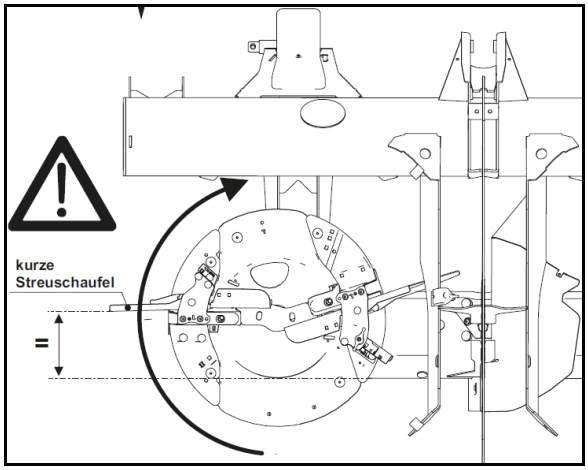


6.4.2 Determining the calibration factor using the shutter (for slug pellets)

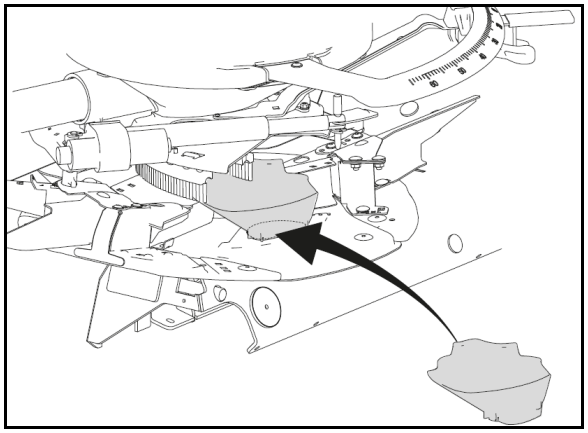
Preparing the calibration

1. Turn the left spreading disc to the correct position.

Position of the short spreading vane, outside →

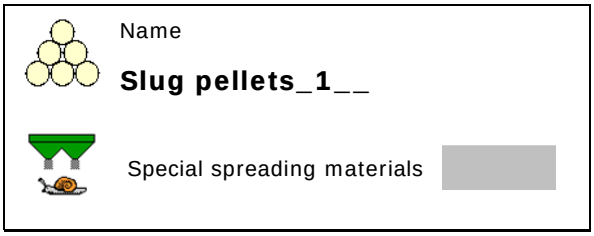


2. Mount the calibration chute for the slug pellets above the left spreading disc.
3. With manual adjustment of the delivery system: Set the delivery system to Position 10 on the left side.
4. Add a sufficient quantity of fertiliser to the hopper.
5. Position the collection bucket under the left outlet opening.



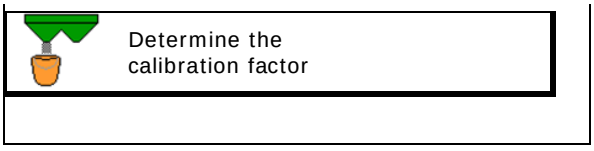
Select the fertiliser menu.

6. Special spreading material: Select slug pellets.

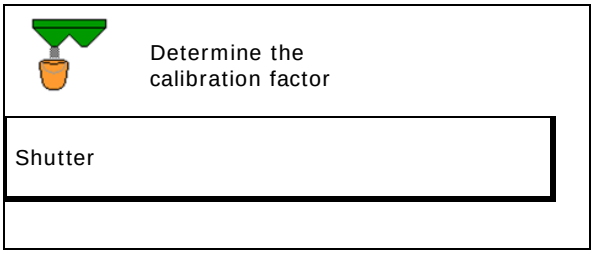


Determining the calibration factor for the slug pellets

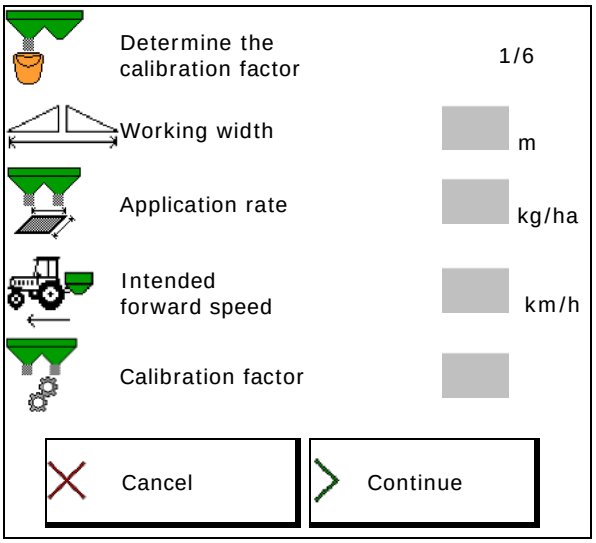
1. Determine the calibration factor.



2. Select the calibration shutter.



3. Check the value entered for the slug pellets:



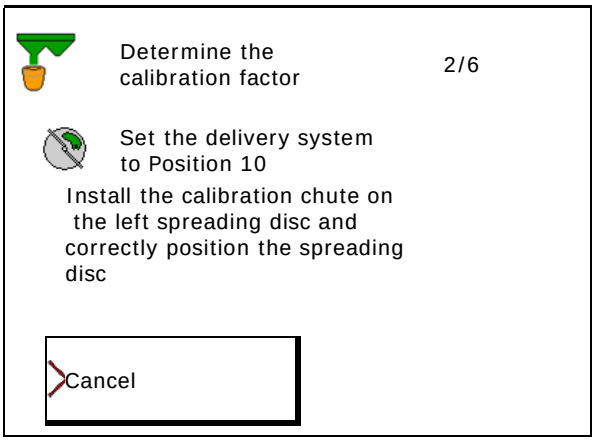
→ **Enter the specified speed and maintain later during spreading!**

Carry out calibration:

→ **>** continue

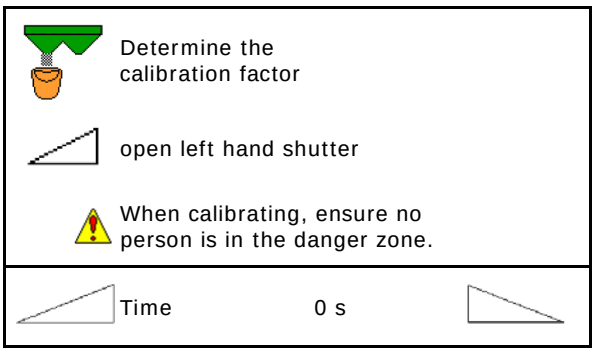
With electrical delivery system:

4. Set the delivery system to Position 10 on the left side.

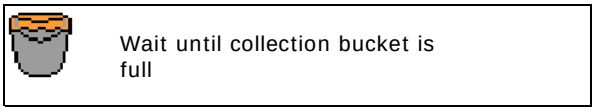


5. Open the left slide gate

→ During calibration, the terminal indicates the calibration time in seconds.

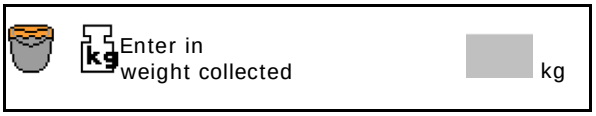


6. As soon as the collection bucket is full, close the shutter to the left.



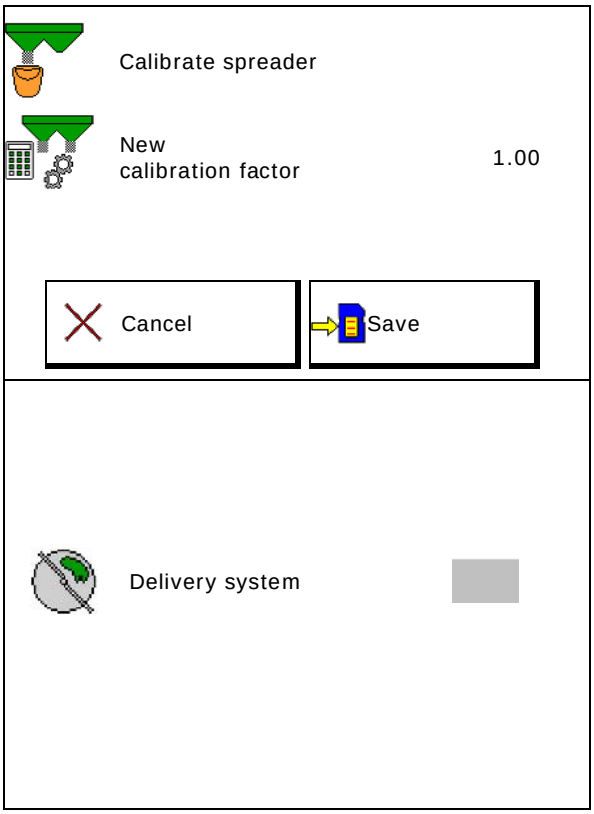
7. Weigh the collected amount (take account of the weight of the collection bucket).

8. Enter amount of weighed fertiliser, pay attention to the units.



→ The new calibration factor will be displayed.

9. Store the calibration factor or abort calibration.



10. Correct the settings.


Select the fertiliser menu,

Delivery system: enter the position from the slug pellets setting chart.

11. With manual adjustment of the delivery system: Set the delivery system on the left according to the setting chart.

12. Remove the calibration chute for slug pellets.

6.5 Weighing spreader ZA: Automatic determination of the fertiliser calibration factor

Machine Data menu: Weighing method select **offline calibration**!

Automatic fertiliser calibration occurs at the start of sowing during spreading, with a minimum 200 kg fertiliser being dispensed.

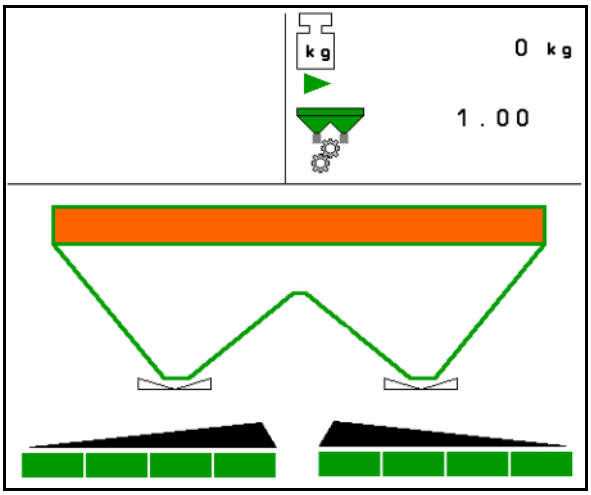
- Tractor with spreader must stand in a horizontal position at the start and end of calibration.
- The calibration factor can only be started and ended when the scale is at rest.

→ If the symbol appears in the display, the spreader is not in its resting position.

1. Select Work menu.
2. Start automatic calibration.
3. Start spreading as usual and spread at least 200 kg of fertiliser.

→ Calibration is indicated with a green triangle.

→ The quantity of fertiliser spread during calibration will be displayed.

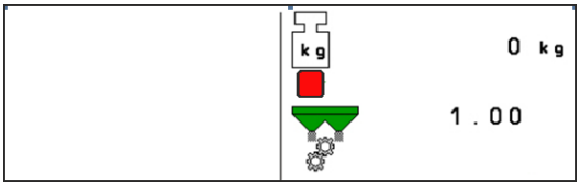


4. If the minimum amount of fertiliser has been spread, close the shutter and stop.
5. End automatic calibration.

→ Calibration end is indicated with a red square.

→ The new calibration factor will be displayed.

6. Store the calibration factor or abort calibration.
7. Resume spreading.



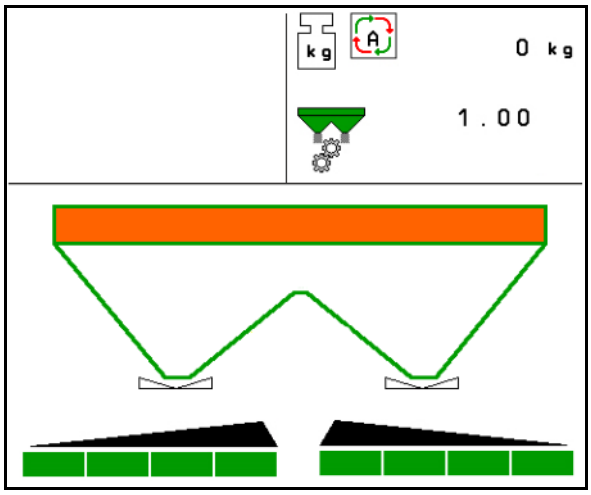
Calibration travel can be carried out at any time while working in order to optimise the calibration factor.

After the first fertiliser calibration, additional calibrations should be performed with higher application rates (e.g. 1000 kg) to further optimise the calibration factor.

6.5.1 Weighing spreader ZA: Online fertiliser calibration

Activate online calibration if continuous calibration is to be performed during spreading.

Machine Data menu: Weighing method select **online calibration**!



1.  Select Work menu.
2.  Start online fertiliser calibration.

→  Online calibration is indicated with the automatic symbol.

→ Online calibration is indicated with a green triangle.

→ The current calibration factor will be displayed.

→ The quantity dispensed since last online calibration will be displayed.

3. Start to spread as usual

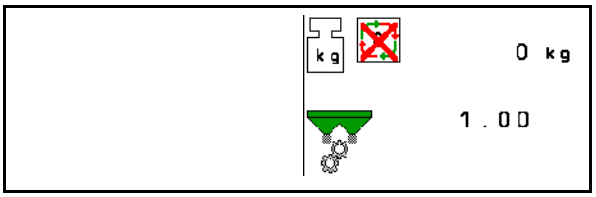
 Interrupt online fertiliser calibration.

→  Interruption of the online calibration is indicated.

Online calibration is only possible when the scales are not moving and there is more than 200 kg in the hopper.

If the symbol  appears in the display, the spreader is not at rest.

The calibration value is continuously recalculated via online weighing and the theoretically applied quantity. The required shutter position is matched online.



When working in hilly areas or on uneven ground the system may introduce discrepancies in the determination of weight:

In this case, switch the online calibration off while travelling.

→  Interruption of the online calibration is indicated.

→ Spreading will continue with the displayed calibration factor.

During spreading, online calibration will switch off automatically if the hopper contents are less than 200 kg.

It will switch on again automatically after refilling (hopper contents more than 200 kg).

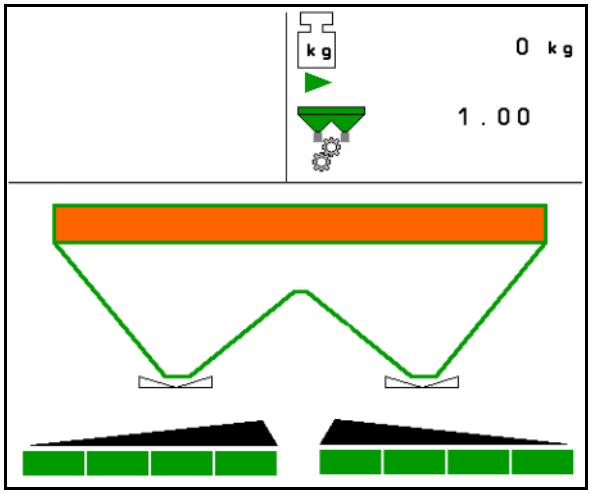
6.6 ZG-TS: Determining the fertiliser calibration factor automatically

- Fertiliser calibration via weighing technology is executed automatically at the start of spreading; at least **1000 kg** of fertiliser should be applied.

- Tractor with spreader must stand in a horizontal position at the start and end of calibration.
- The calibration factor can only be started and ended when the scale is at rest.

→ If the symbol appears in the display, the spreader is not in its resting position.

1. Select Work menu.
4. Start automatic calibration.
5. Open and move the shutter

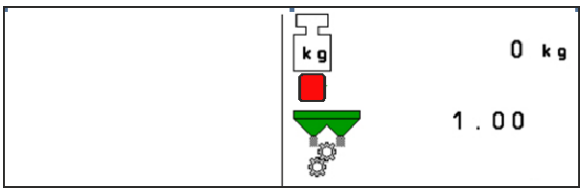


- Fertiliser chamber is filled automatically via the floor belt.
- Start once the floor belt has stopped.
- Open the shutter when driving away.

6. Start spreading as usual and spread at least 1000 kg of fertiliser.

→ Calibration is indicated with a green triangle.

→ The quantity of fertiliser spread during calibration will be displayed.



7. If the minimum amount of fertiliser has been spread, close the shutter and stop.
8. End automatic calibration.

→ Calibration end is indicated with a red square.

→ The new calibration factor will be displayed.

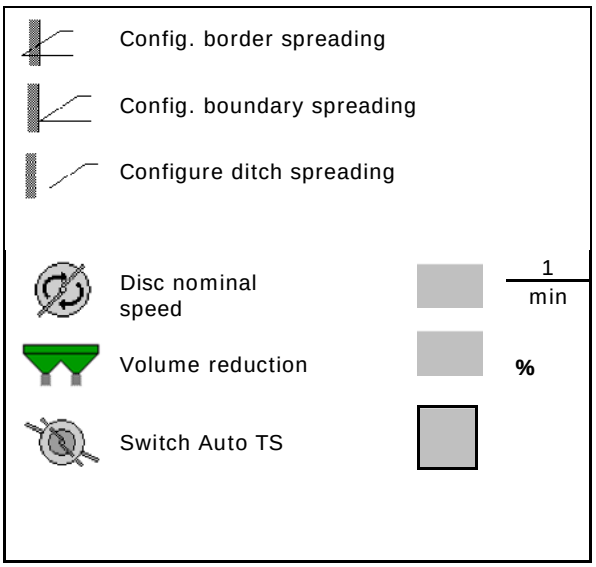
9. Store the calibration factor or abort calibration.
10. Resume spreading.

After the first fertiliser calibration, additional calibrations should be performed with higher application rates (e.g. 1000 kg) to further optimise the calibration factor.

6.7 Border, boundary and ditch spreading configuration

When carrying out a type of boundary spreading, the values are entered automatically.

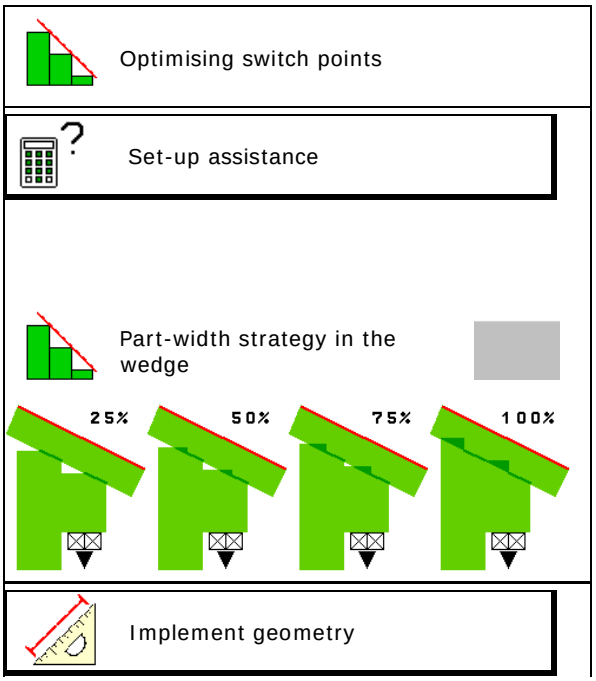
Values according to details in the setting chart.



- Enter the nominal disc speed.
- Enter the quantity reduction in %.
- Switch Auto TS
  - o ☑ Boundary spreading with Auto TS boundary spreading vanes
  - o ☐ Border spreading without Auto TS (X in the setting chart)

If the speed is adjusted in the work menu during border or trench spreading, then the adjusted speed is incorporated here and is used as standard.

6.8 Optimising switch points



- Set-up assistance
  - o Select the set-up assistance for the switch-on point or the switch-off point.
  - o Select too early or too late switching.
- Switching part width sections on wedges (half the working width), see Page 27

Default value 75 %

- Show the implement geometry

6.8.1 Switching part width sections (half the working width) in the wedge

Section Control switches 4 part width sections on each side

- On when driving out of the inside of a wedge.
- Off when driving into a wedge from the outside.

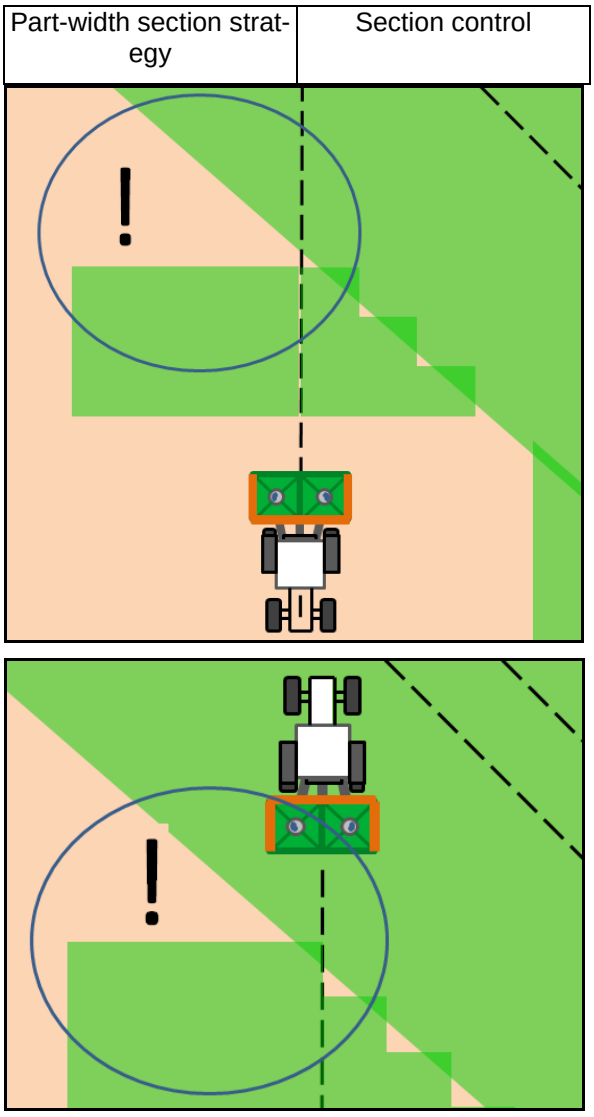
The function:

Part width section strategy switching in the wedge

Switches the other side completely on/off.

The switch point for this side can be set by entering the percent value.

- Tolerate 25 % under fertilising
- 50 %
- 75 %
- Tolerate 100 % over fertilising



6.8.2 Set-up assistance

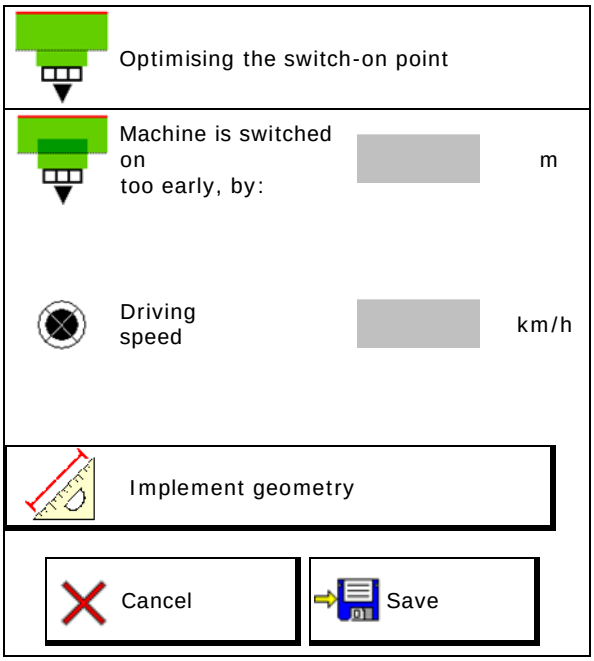
1. Enter the route which should be switched off too early/too late.
2. Enter the driving speed (only for time-based adjustment).

→ When switching the implement, the entered speed should be maintained.

→ New implement geometry and on/off point delays will be calculated.

- Show new implement geometry

3. Save the settings or Cancel.

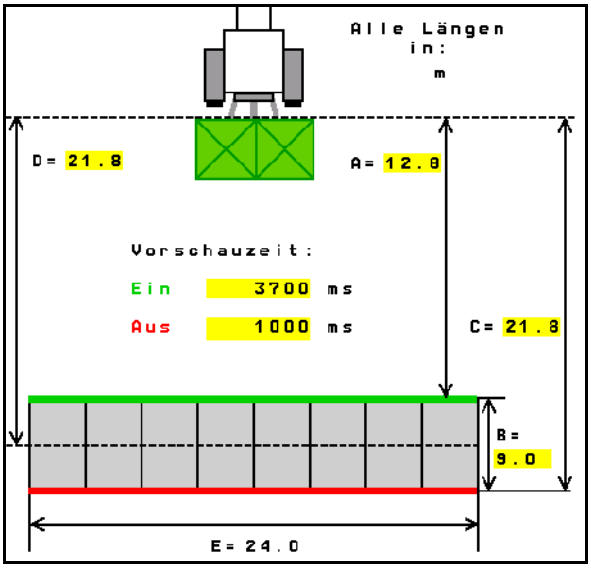


6.8.3 Device geometry

Displaying the implement geometry is important in case the control terminal does not automatically adopt the changed values.

In this case, after optimising the seitch points, the changed values must be manually entered in the GPS menu.

The changed values are marked in yellow.



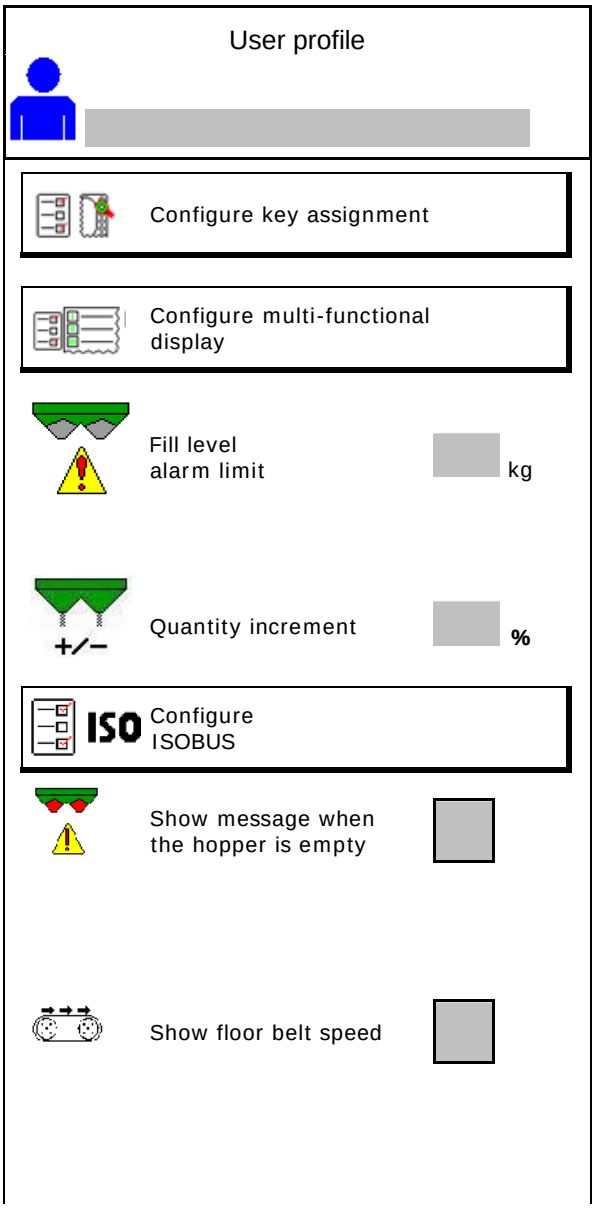
7 User profile

Select **User profile** in the main menu!

- Enter the name of the user
- Configure key assignment (see page 31)
- Configure the multi-functional display in the Work menu (see page 33).
- Enter alarm limit for residual quantity in kg (fertiliser spreader with low level alarm).

→ There is an acoustic warning when the residual fertiliser quantity is reached.

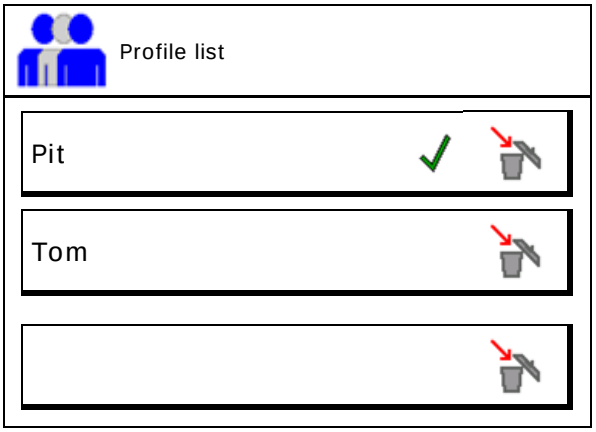
- Enter the quantity increment for increasing or reducing the spreading quantity.
- Configure ISOBUS, see page 34.
- In the work menu, show message when the hopper is empty (low level alarm must be installed).
  - o ☑ Show message
  - o ☐ Do not show message
- Show the floor belt speed in the work menu (ZG-TS).
  - o ☑ Show message
  - o ☐ Do not show message



User: change, new, delete

- Change user:
- Create new user:

1. Create new user.
2. Mark user.
3. Confirm marking.
4. Enter name.



- Copy the current user with all their settings.
- Delete user:

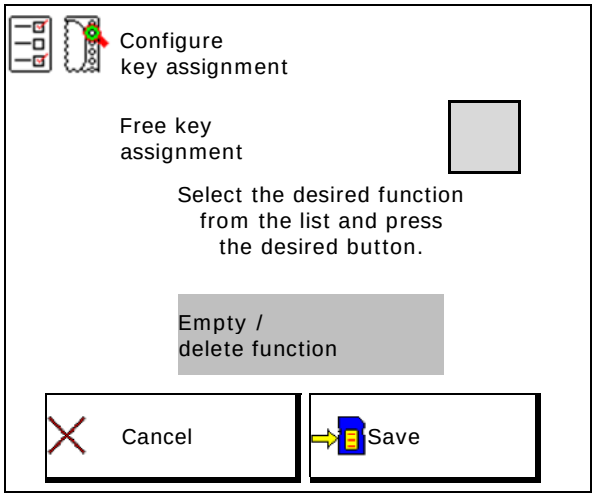
When using an AUX-N multi-function stick, the freely selected key assignment of the multi-function stick are saved with the respective user.

Each user profile needs a key assignment.

Perform the key assignment on the VT1.

7.1 Configure key assignment

Here the function fields of the work menu can be freely assigned.



- Free key assignment
  - o ☑ Freely assignable key assignment
  - o ☐ Standard assignment of the keys

Perform key assignment:

1. Call up list of the functions.

→ Functions which have already been selected are greyed out.

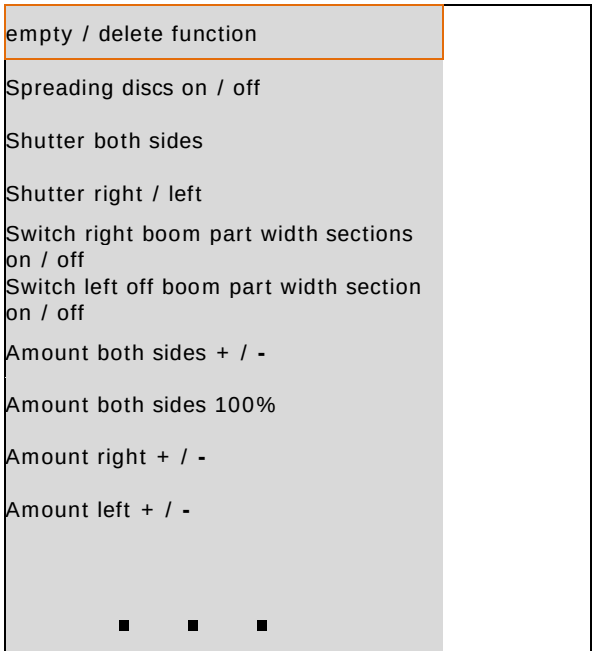
2. Select function.
3.  Select the screen where the function should be saved in the work menu.
4. Press the key / function field in order to place the function to the key / function firled.
5. In this manner, all functions can be assigned any way you like.
6.  Save the settings or

    cancel.

   - o Multiple use is possible.
   - o All of the functions do not need to be assigned.

-  Function field without function.

Call up the list of functions→



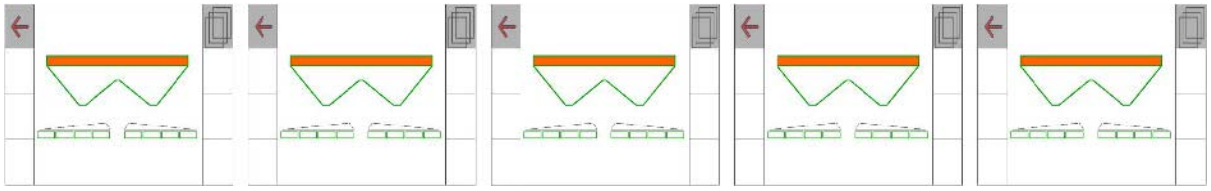
Work menu:

 ·Calling up the freely assignable function groups.

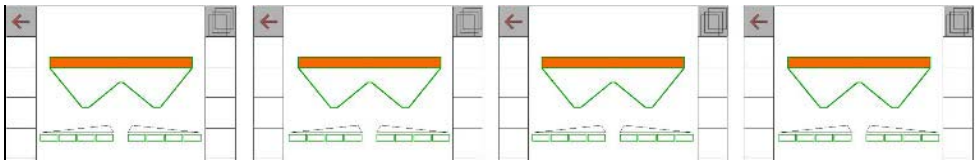
Example: for freely assignable functions 1 to 30, 32 in the Work menu

Page 1	Page 2	Page 3	Page 4	Page 5

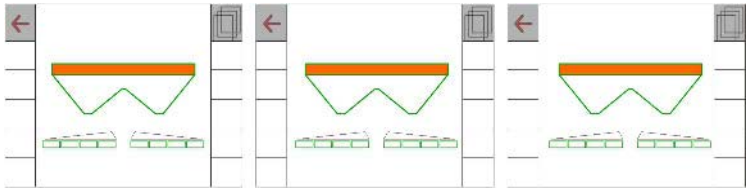
8 key terminal:



10 key terminal:



12 key terminal:



7.2 Configuring the multi-functional display

Six different data sets can be shown in the data lines in the Work menu.

(1) Current speed

(2) Worked area per day

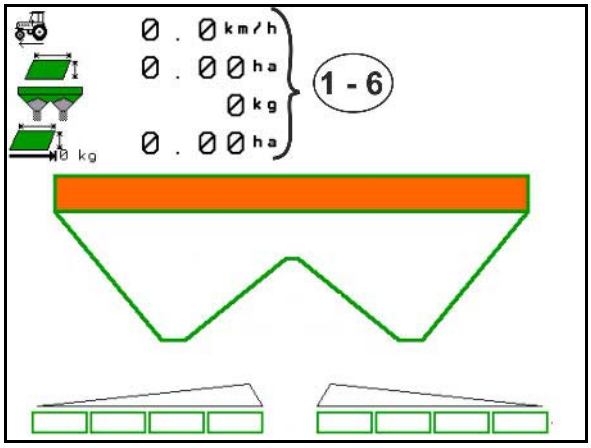
(3) Spread quantity per day

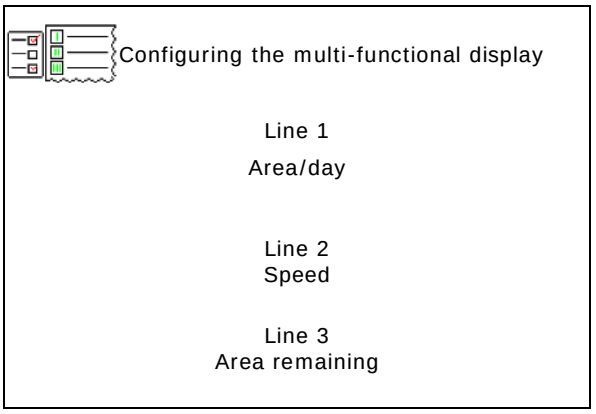
(4) Remaining distance until hopper is empty

(5) Remaining area until hopper is empty

(6) Distance counter for the headlands to locate the next tramline.

The distance counter is set to zero when closing the shutter at the headlands and starts measuring the distance until the shutter is opened.





7.3 Configure the ISOBUS

- Change the virtual terminal (VT)

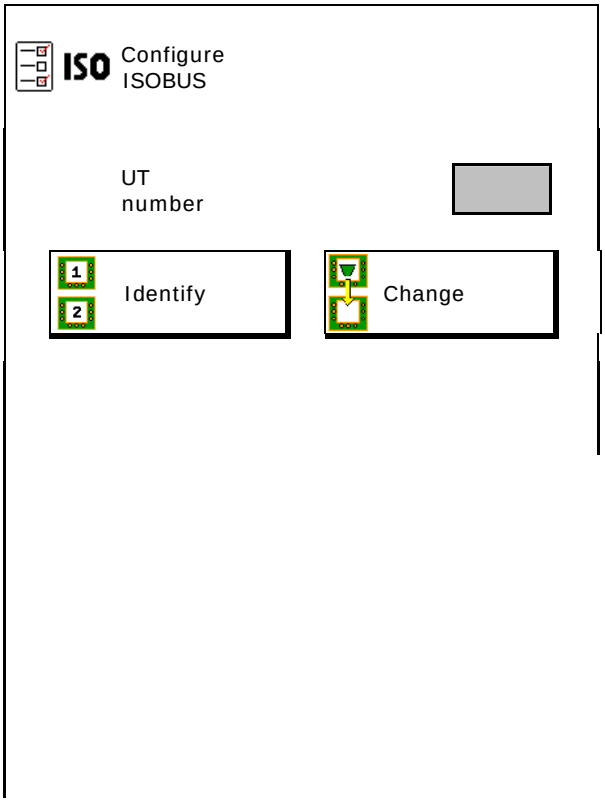
  If 2 in-cab terminals are connected to the ISOBUS then the terminal for displaying the AMAZONE implement operation can be selected.

  Every ISOBUS terminal is equipped with a VT number. The software ISOBUS logs onto the terminal displayed.

  o Identify terminals: all ISOBUS terminals connected show their VT number.

  o Change the virtual terminal:

  1. Call up the VT number list.
  2. Select the desired terminal for displaying the ISOBUS software.
  3. Press to change the VT terminal.



Logging onto the VT terminal can take up to 40 seconds.

If the terminal entered is not found after this time, the ISOBUS logs onto another terminal.

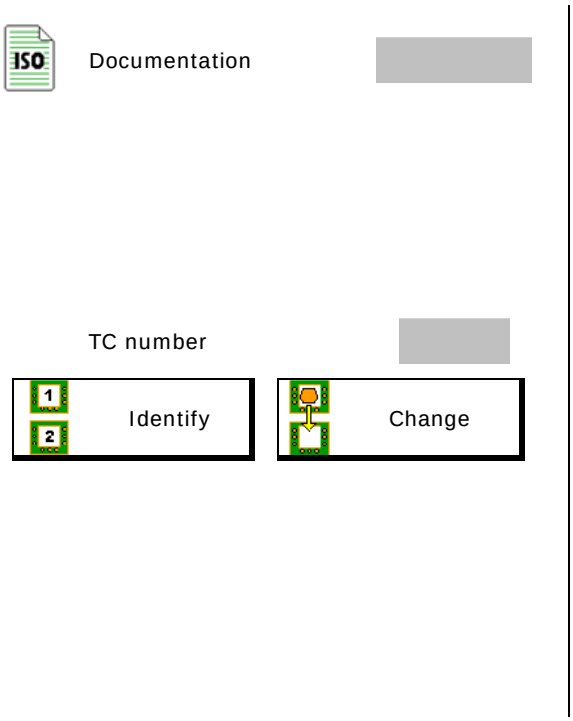
- Documentation

  o TaskController, job management active → The implement computer communicates with the Task Controller of the terminal

  o Only machine-internal documentation

  If 2 control terminals each fitted with a TaskController are connected to the ISOBUS, a TaskController can be selected.

  1. Display the identification number of the current Task Controller.
  2. Select the number for the desired terminal (TaskController).
  3. Use the selected Task Controller.



- Switching the Section Control to Manual/Automatic
  - In the GPS menu

    Section Control is switched in the GPS menu.
  - In the work menu (recommended setting)

    Section Control is switched in the ISOBUS Work menu.

     Section Control Manual/Automatic
- Adjusting the switch points
  - Distance-based (terminal supports working length)
  - Time-based (terminal does not support working length)

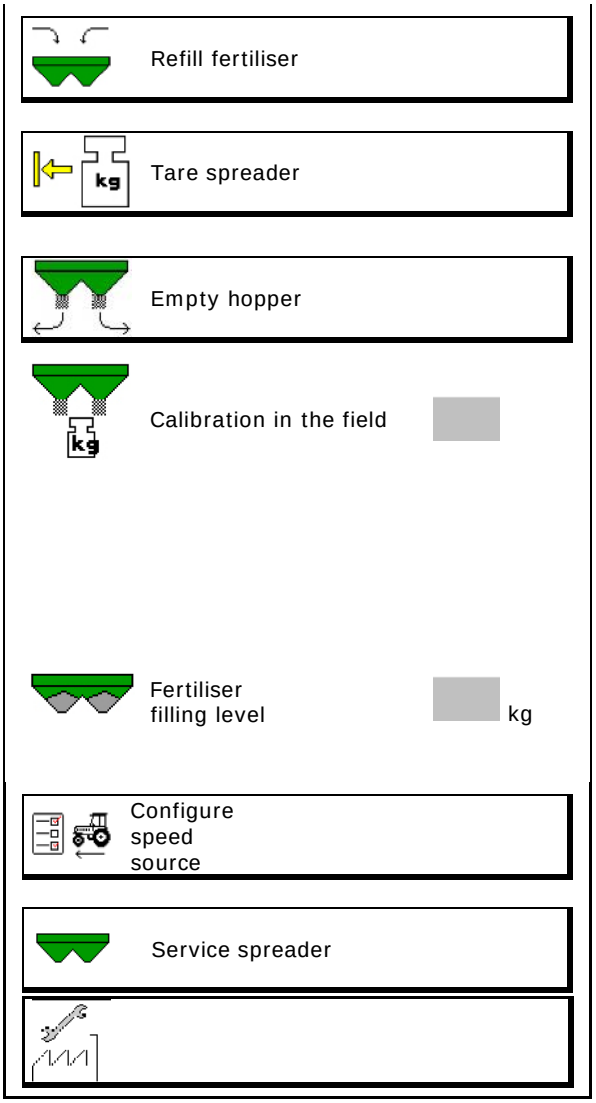
 Section Control Switching Manual/Automatic

 Adjusting the switch points

8 Entering machine data


In the main menu, select **Machine data**!

- Add fertiliser (see page 37).
- Weighing spreader: Tare the spreader, e.g. after the mounting of speacial equipment see page 38).
- Empty the hopper after use and before cleaning (see page 38).
- Weighing spreader: select Calibration in the field.
  - o Offline calibration:
    Determination of the fertiliser calibration factor when beginning to spread.
  - o Online calibration:
    Continuous determination of the fertiliser calibration factor while spreading.
- Fertiliser filling level kg (not for fertiliser spreader with weighing technology).
- Configure the signal source for speed (see page 39).
- Service spreader, see page 39.
- Call up Setup menu (see page 40)
  - o Perform basic settings
  - o Display diagnostics data
  - o Reset machine computer



8.1 Refill fertiliser

Refill fertiliser.

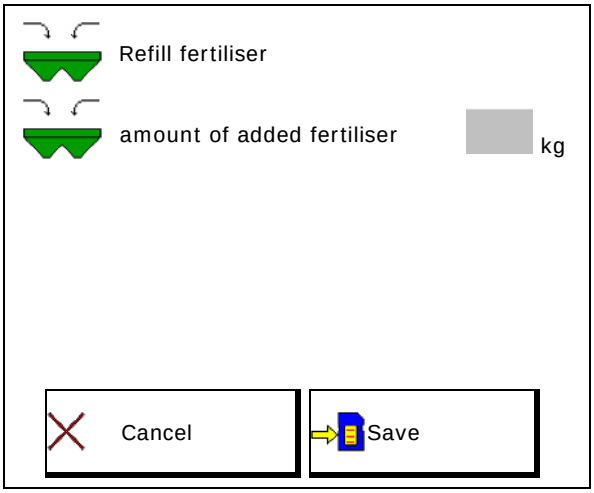
Fertiliser spreader without weighing technology:

→ Enter amount of added fertiliser in kg and store.

Fertiliser spreader with weighing technology:

→ Added quantity of fertiliser is displayed in kg.

Store added quantity of fertiliser.



8.2 Emptying the fertiliser hopper

The remaining fertiliser in the hopper can be emptied via the hopper tips.

ZA-TS with a mechanical spreading disc drive:

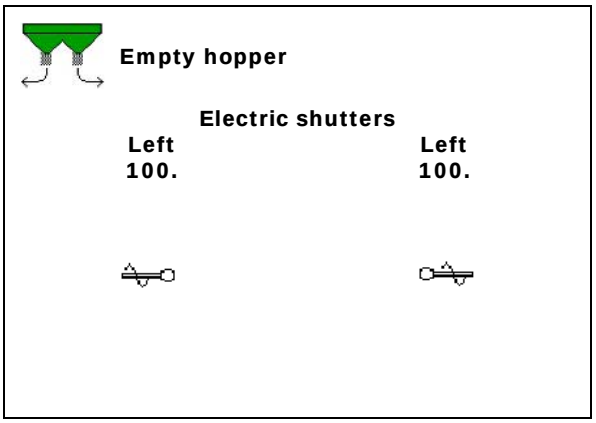
Empty residue on left and right separately.

1. Turn the spreader disc by hand so that the hole in the spreader disc is pointing inwards, directly under the opening on the hopper.
2.  Open both sutter.
3. ZA-TS:  run agitator shaft if required. Keep the function field pressed.

→ Residual fertiliser runs out.

4.  Close shutter.

- Display 0 – Shutter closed
- Display 100 – Shutter open



WARNING

Risk of injury near the rotating agitators and spreading disc drive.

- Keep spreading disc drive switched off!
- ZA-TS: Make sure the agitators and disc drive are switched off when emptying the residue.

8.3 Weighing spreader: Taring the fertiliser spreader

Taring the fertiliser spreader serves to determine the weight of the spreader with 0 kg hopper contents.

The spreader must be tared after fitting special equipment (see Page 43).

1. Completely empty the fertiliser spreader.
2. Wait until the  symbol turns off.
3. Tare spreader.

→ Fertiliser fill level is displayed at 0 kg.

4.  save.

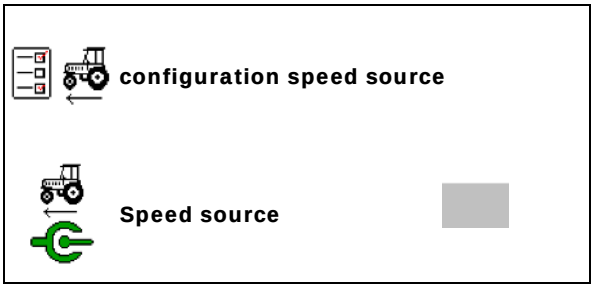
8.4 Speed signal source

There is a choice of four sources for the travelling speed signal input.

- Ground (ISOBUS), e.g., radar
- Wheel (ISOBUS), e.g., tractor wheel
- Wheel (implement), e.g., implement towed with wheel
- Position (ISOBUS), GPS ISOBUS standard
- Position (J1939), GPS J1939 standard
- Simulated

→ After selecting the speed, enter the value for the simulated speed.

Entering a simulated speed allows you to continue spreading even if the speed signal from the tractor fails.



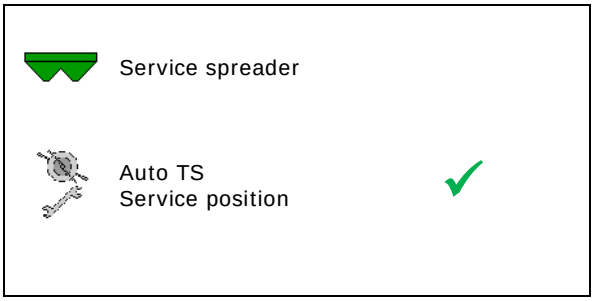
8.5 Service spreader

Necessary to make it easier to exchange the spreader disc units TS1, TS 2, TS3

1.  Put Auto TS in a voltage-free middle position.

→ ✓- Auto TS display is in the centre position

2.  Auto TS returns to its original position



8.6 Setup

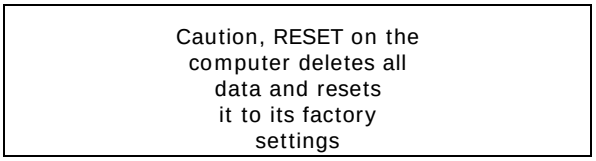
0000 Select **Setup** in the main menu and enter the four digit code!

In the setup, you can change the machine's basic settings. Adjustment errors can result in failure of the machine.

- Entry and output of diagnosis data (only for customer service, see Page 40).

- Enter machine settings (see Page 41).

- Reset the machine computer to factory defaults and delete all data (see Page 47).



8.6.1 Diagnosis

DANGER

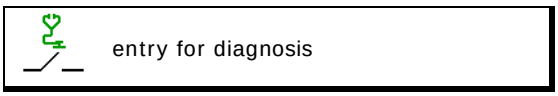
Risk of injuries resulting from operating electrically or hydraulically operated adjustors which, in normal operation, are secured by safety functions in the software

Safety functions are deactivated in the diagnostic menu.

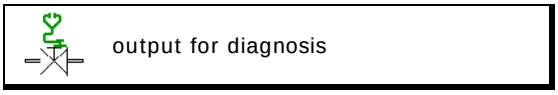
→ Only for customer service


Call up diagnosis.

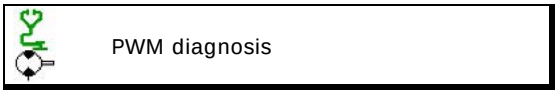
- Data entry for diagnosis



- Data output for diagnosis



- PWM data output



8.6.2 Entering the machine settings

- Select machine type
  - o ZA-TS
  - o ZG-TS
- Configure spreader disc drive
  - o ☑ Hydraulic spreading disc drive
  - o ☐ PTO drive
  - o Hydraulic spreading disc drive control factor

    Default value:10

    Value range: 1-30
- Calibrate shutter (see page 42)
- Configure scale (see page 43)
- Configure drop-point system adjustment (see page 46)

Should only be performed by customer service!

- Configure Auto TS (see page 45)
- Configure empty alarm
- Switch-on delay:

  Default value: 1000 ms

Postive value/higher value:

→ Switches on earlier (overlapping)

Negative value/smaller value:

→ Switches on later (no overlapping)

- Switch-off delay:

  Default value: 1000 ms

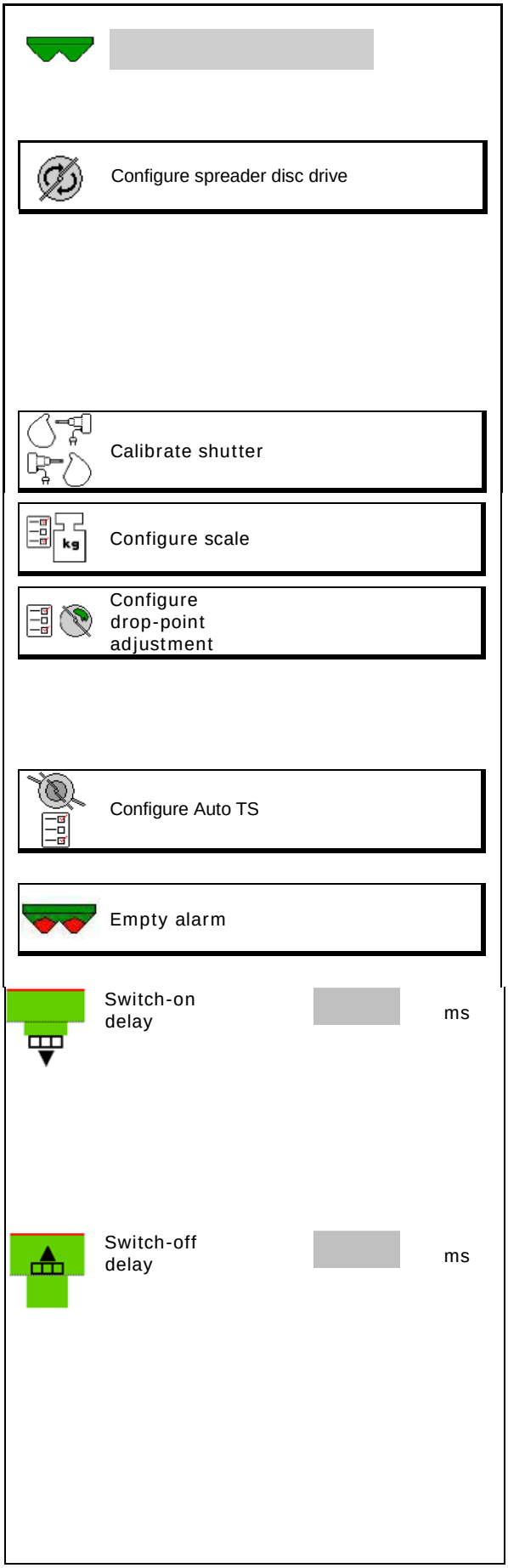
Postive value/higher value:

→ Switches off later (overlapping).

Negative value/smaller value:

Switches off earlier (no overlapping).

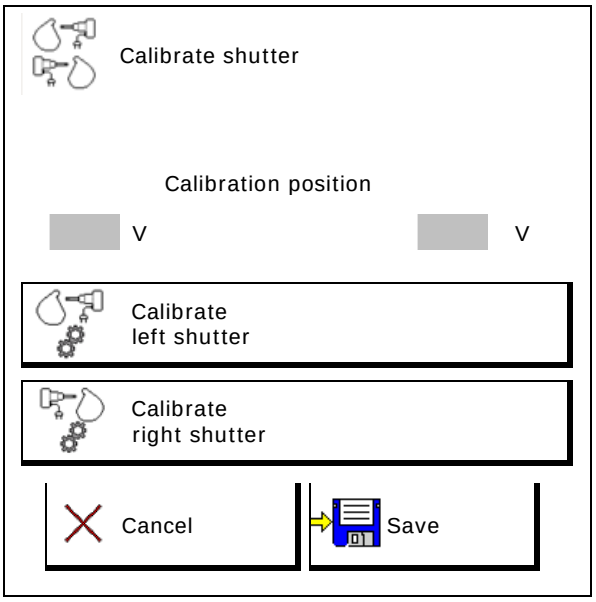
Switch-on delay/switch-off delay compensate for technical delays when switching with Section Control.



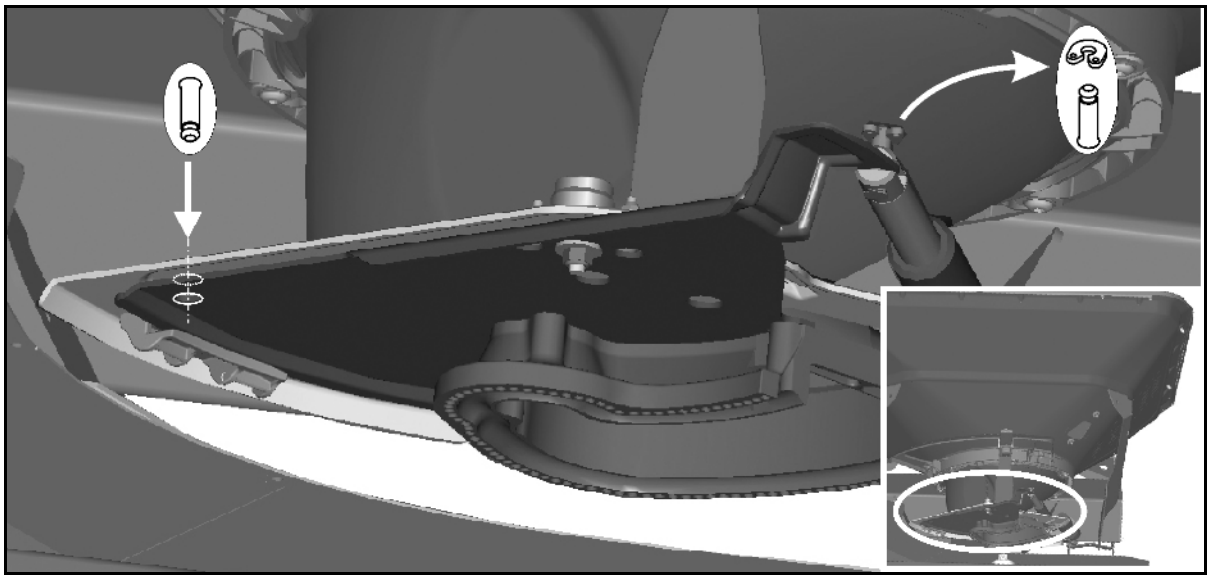
Calibrate shutter

After updating the software, the values can be entered manually.

The shutters on the left and right can be configured consecutively.



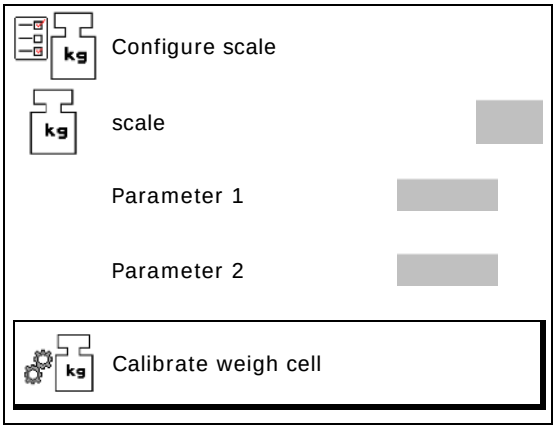
1. Disengage motor.
2. Move shutter to calibration position.
3. Mark calibration position with pivot pins (8 mm diameter).
4.   Carry out and save the calibration.
5.  Save the settings or  Cancel.
6. Attach motor to shutter again before leaving the menu.



Scale configuration

Weighing spreader?

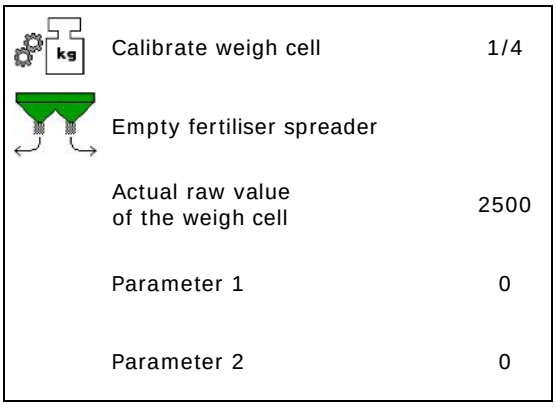
- o Scale ☑ (yes)
- o Scale ☐ (no)



The weigh cell is tared and calibrated at the factory. However, if there are differences between the actual and the displayed spread quantity or the hopper contents, the weighing cell needs to be recalibrated.

The weighing cell should be tared if special equipment is fitted.

1. The fertliiser spreader must be completely emptied (see Machine Data menu).



Fertiliser spreader is not empty:

→ Abort configuration.

→ Empty fertiliser spreader, see Machine Data menu.

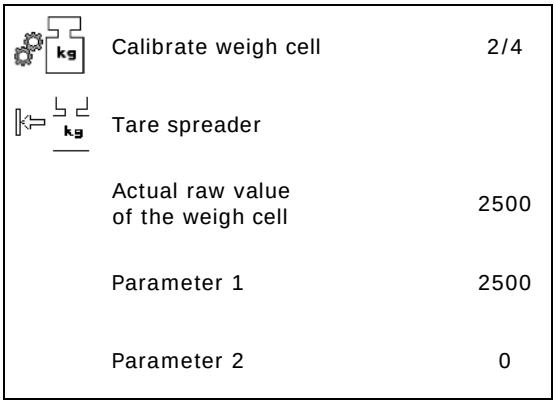
Fertiliser spreader is empty:

2. **>** continue

3. Park the tractor and the attached spreader on a horizontal surface and wait until it has come to a complete rest.
4. **>** continue

→ Parameter one is set.

→ **The spreader is tared.**



5. Fill at least 500 kg of fertiliser into the hopper.
6. Park the tractor and the attached spreader on a horizontal surface and wait until it has come to a complete rest.
7. **> continue**

	Calibrate weigh cell	3/4
	Fill with at least the min. qty of fertilis.	500 kg
	Actual raw value of the weigh cell	1600
	Parameter 1	2500
	Parameter 2	0

8. Enter the precise quantity of fertiliser just added.
9. **> continue**

→ Parameter two is set.

	Calibrate weigh cell	4/4
	Enter the filled fertiliser quantity	0 kg
	Actual raw value of the weigh cell	16000
	Parameter 1	2500
	Parameter 2	8.0

Display: The basic setting is changed.

10.  Store

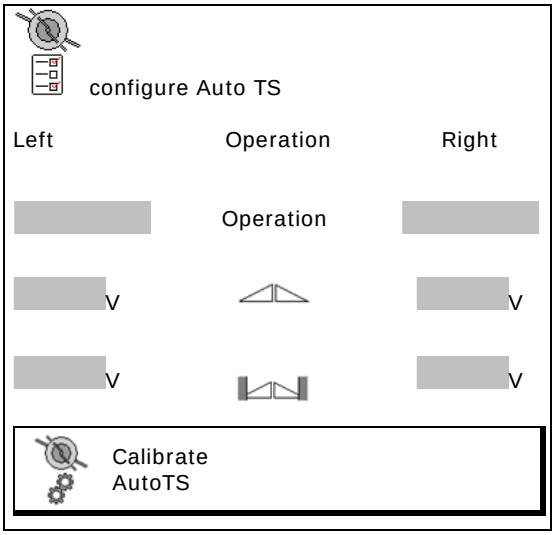
→ The spreader is calibrated.

Check by comparing the display in the work menu with the quantity of fertiliser added.

Configure AutoTS

- Operation
  - Electrical (AutoTS)
  - Manual (ClickTS)

After updating the software, the values can be entered manually.



Carry out calibration:

- after exchanging the spreading disc units, spreading vanes.
- if there is an error message: Auto TS position not adhered to.

- Calibrate AutoTS

1.  Approach normal spreading position.
2.  Approach border spreading position.
3.  **Save**

→ The learned positions are saved.

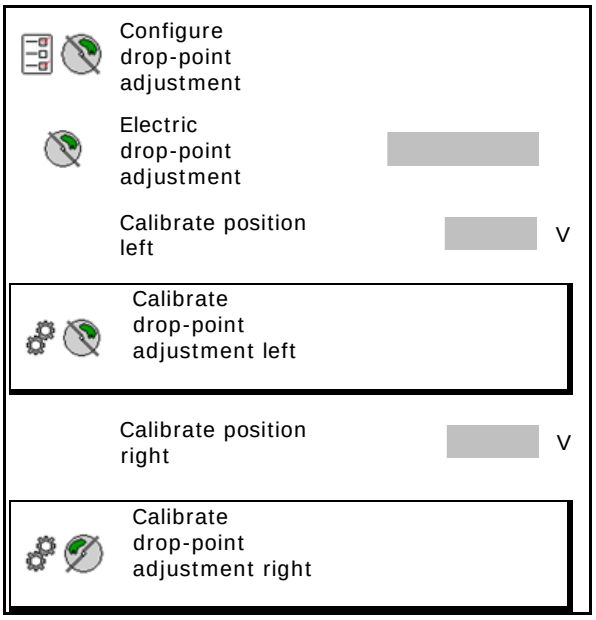
Configure drop-point adjustment

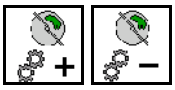
- Electrical drop-point adjustment
  - o off
  - o Both sides

After updating the software, the values can be entered manually.

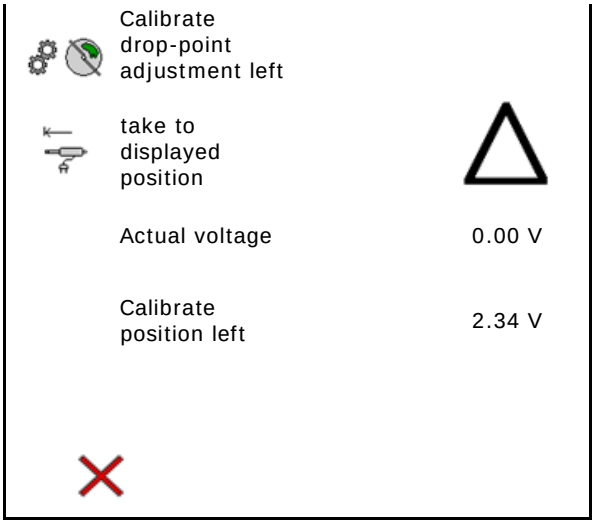
Calibrate drop-point adjustment separately on the left and right.

2 people are required to do this.

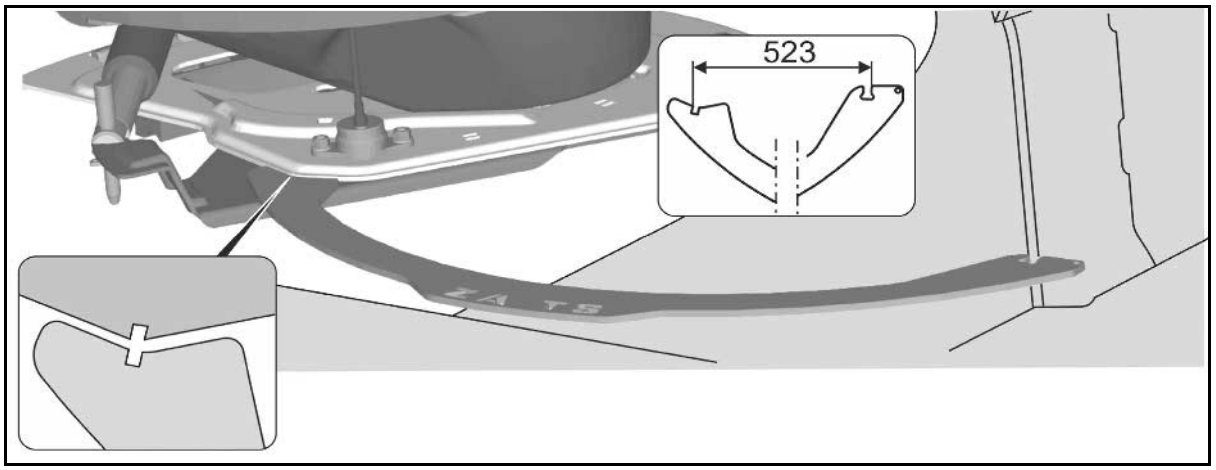


1.  Approach position shown.
2. Apply gauge so that the groove encloses the centre rib of the machine and points in the direction of the side of the spreader to be calibrated.
3.  Adjust the drop-point system until the marker on the drop-point system reaches the tip of the setting gauge.
4. **> Continue**
5.  **Save**

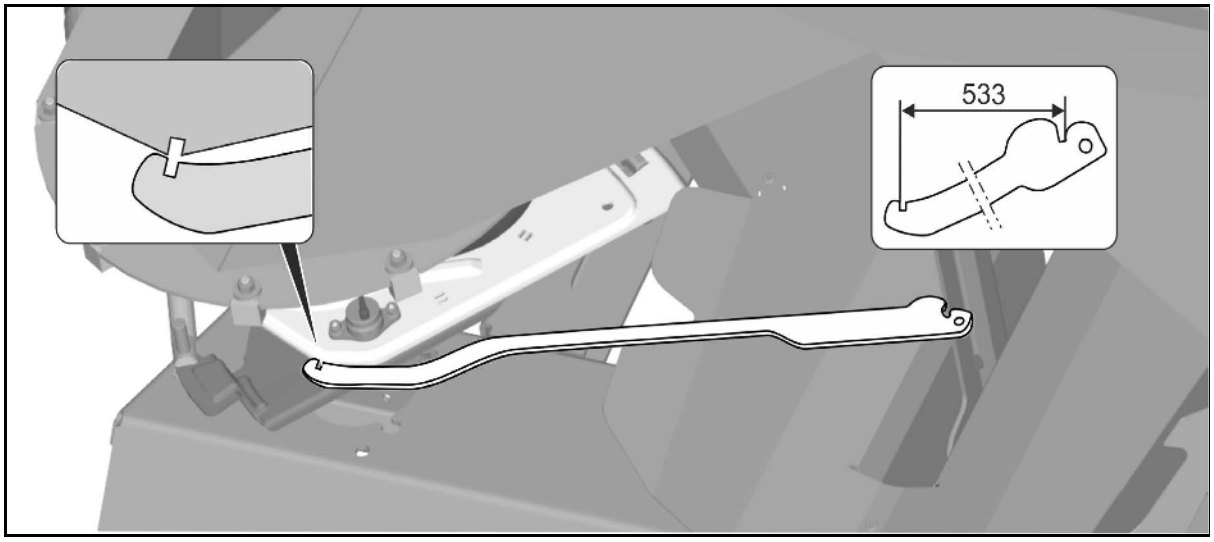
   One side of the drop-point system is calibrated.



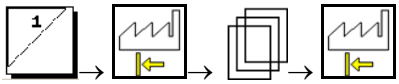
ZA:



ZG-B:



8.6.3 Resetting machine computer

-  Reset of the machine computer to factory settings.

Caution, RESET on the computer deletes all data and resets it to its factory settings

All entered and generated data (jobs, machine data, calibration values, setup data) will be lost.

Note the following details beforehand:

- Scale: parameters 1 and 2
- All calibration voltages:

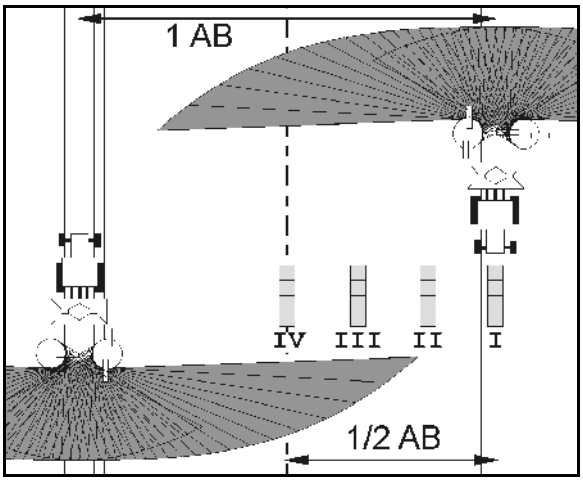
  Shutters, AutoTS and drop-point adjustment

- Pulses for determining the speed (if appli-cable)

9 Mobile fertiliser test rig

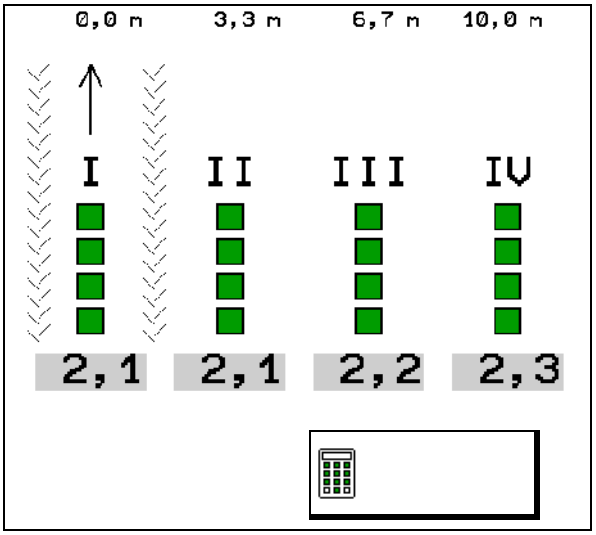

Select **Mobile test rig** in the Main menu.

Start mobile fertiliser test rig as explained in the mobile test rig operating manual and estimate the lateral distribution.



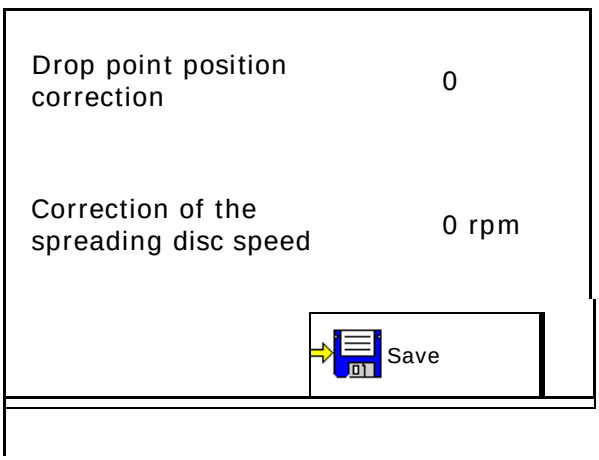
For each test series, successively fill the quantities of fertiliser into the measuring cup from each of the four collection trays in their four setup positions (I, II, III, IV) and enter the number of scale lines at the terminal.

The distances between the fertiliser collection trays are displayed depending on the working width. →



1. Enter the number of scale lines for fertiliser level **I to IV**.
2.  Calculate the new adjustment value.
3. Perform the adjustment after calculating the setting value.

- The inlet system position selected in order to correct the computed difference, see fertiliser menu.
- Correct the spreading disc speed by the difference calculated, see fertiliser menu.

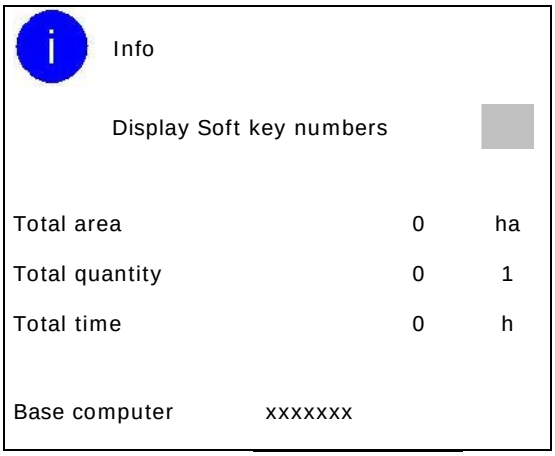


4.  Save the value calculated and return to the main menu.

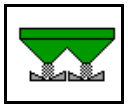
10 Info menu

Select **Info** in the main menu!

- Display the softkey number in the menus.
- Display
  - Total area
  - Total quantity
  - Total time
- Show the software version



11 Application on the field

 Select **Work menu** in the main menu!

If the work menu is left while working, then after 10 seconds, it automatically changes back to the work menu.

Weighing spreader:

- Carry out an automatic fertiliser calibration or switch on the online calibration when you start spreading.
- Tare the spreader before initial use and after fitting special equipment (see page 43).

Before the spreader can be used, the following information must be entered:

- Enter the fertiliser data from the setting chart in the fertiliser menu (see page 36).
- Load and start job (see page 12).
- Calibrate fertiliser at standstill or enter calibration value manually (see page 12).

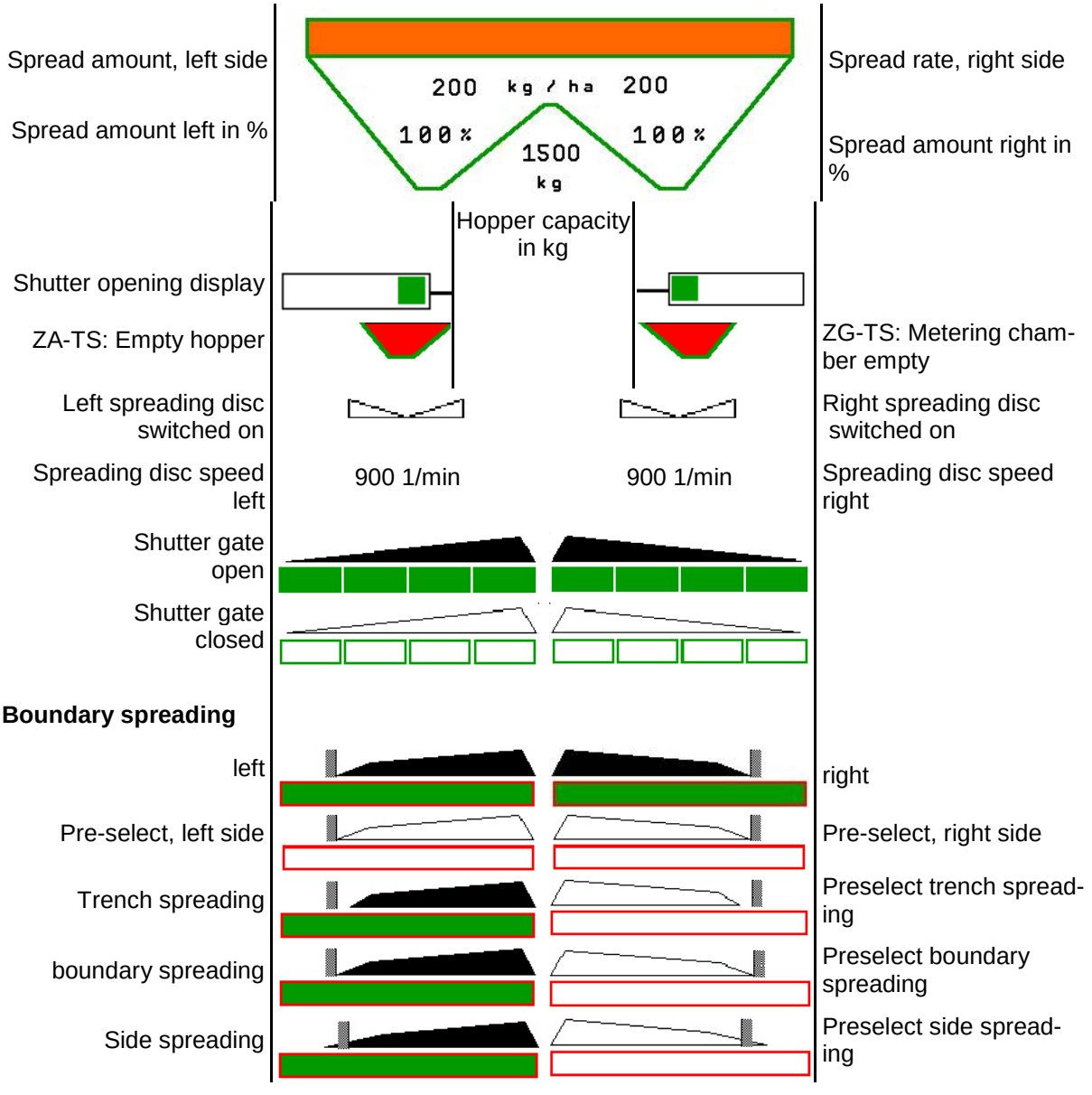
 Scrolling in the Work menu

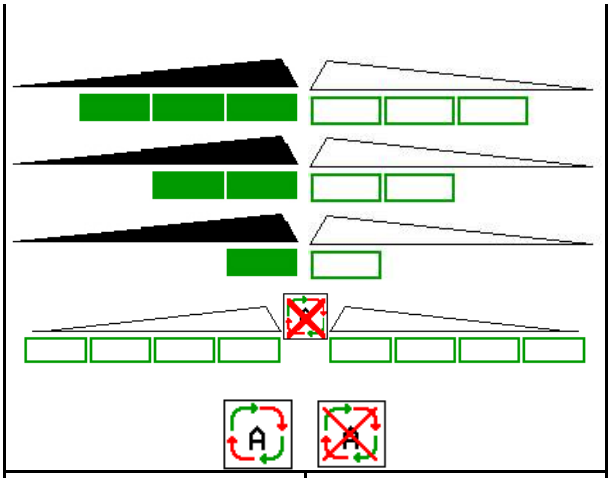
11.1 Functions in the Work menu

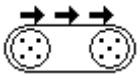
	Refill fertiliser
	Both shutters open / shut
 	Shutter open / shut left right
 	Reduce the spread rate on one side by application rate increment left right
 	Increase the spread rate on one side by application rate increment left right
 	Increase the spread rate on both sides by application rate increment reduce increase
	Adjust the spread rate on both sides to the target quantity
	Calibration travel / Online calibration on / off
	Turn to the next page
	Back to the top menu structure
	Spreading discs on / off (keep pressed for 3 seconds)
 	Border spreading speed increase reduce
 	Trench spreading on / off left right
 	Boundary spreading on / off left right
 	Border spreading on / off left right
 	Switch on boom part width sections left right
 	Switch off boom part width sections left right
	Section Control on / off

11.2 Display Work menu

Multi-functional display	Weighing technology	
		Online calibration On / Off
	24 kg	Quantity at calibration
		Calibration started No calibration
	 0.95	Calibration factor

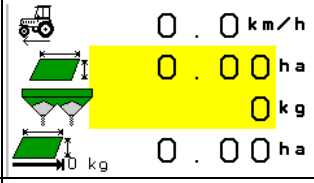
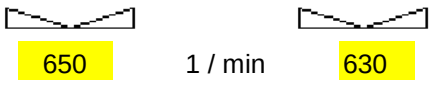


One boom part width section off		Preselect one boom part width section off
Two boom part width sections off		Preselect two boom part width sections off
Three boom part width sections off		Preselect three boom part width sections off
Part width sections switched off, shutter closed		
Section Control:	Automatic | manual	

	ZG-B: Floor belt speed in %

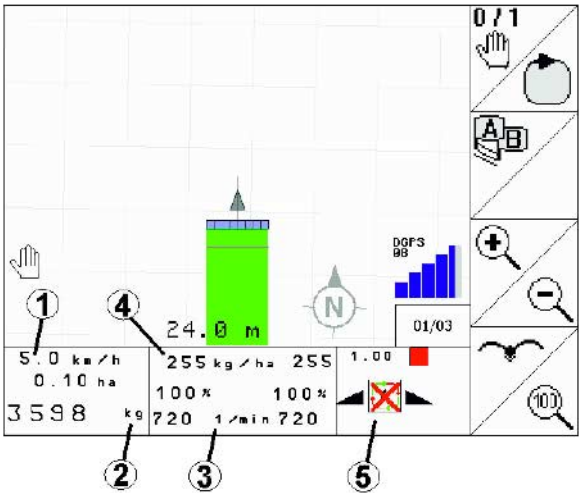
11.3 Special instructions in the work menu

	Displays marked in yellow are indications for deviating from the nominal state.

No job started in the Task Controller	
Application rate deviates from the setpoint by more than 10%	
Percent setpoint rate change entered manually	
Hopper content has reached the indicator limit	
Spreader discs speed deviates by more than 50 rpm from the setpoint.	

11.4 Mini-view in Section Control

Mini-view is a section from the work menu which is shown in the Section Control menu.



(1) The first two rows of the multi-functional display

(2) Fill level in kg

(3) Spreader discs speed

(4) Actual spread rate

(5) Section Control Automatic Mode / Manual Mode

Mini-view cannot be displayed on all operating terminals.

11.5 Description of the functions in the Work menu

11.5.1 Shutter

	Both shutters open/shut

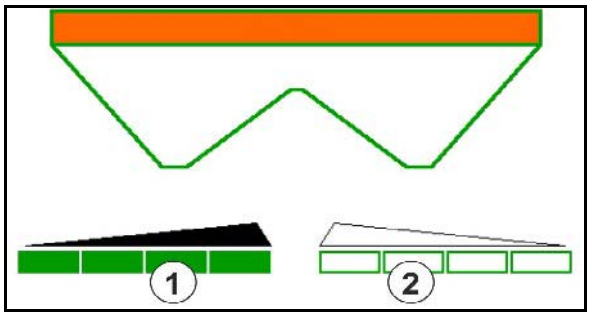
		Shutter left/right, open/shut

Open shutter before use,

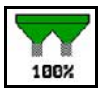
- and drive off
- once the spreading discs have reached the correct speed.

(1) Display shutter left side open.

(2) Display shutter right side closed.

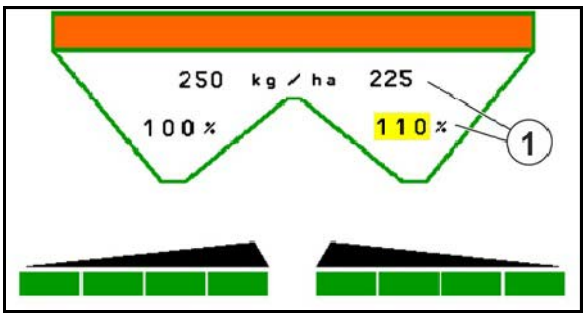


11.5.2 Changing the spread rate while spreading

	Increase / reduce the spread rate on both sides by application rate increment
	Reduce the spread rate on one side by application rate increment
	Increase the spread rate on one side by application rate increment
	Adjust the spread rate on both sides to the target quantity

- Each press of the key changes the spread amount by the rate increment (e.g. 10%).
- Enter the rate increment in the Machine Data menu.

(1) Display changed spread rate in kg/ha and percent.



11.5.3 Weighing spreader: Fertiliser calibration

	• Automatic **fertiliser calibration** for weighing spreader, see Page 22. • Online calibration for weighing spreader, see Page 23

(1) Display fertiliser spreader during calibration travel at the beginning of spreading.

(2) Display no calibration currently.

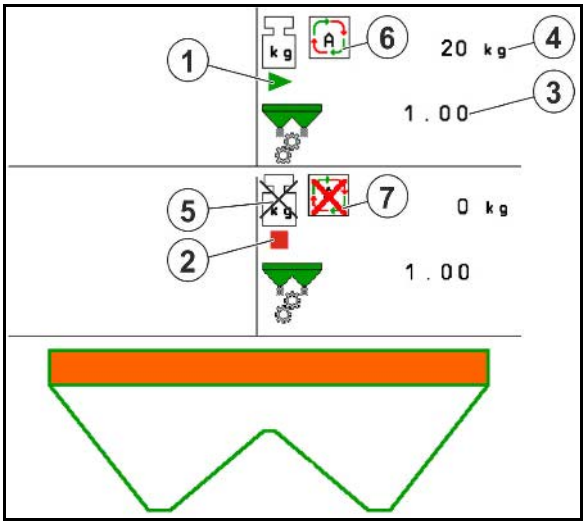
(3) Display current calibration factor

(4) Display quantity of dispensed fertiliser in kg during calibration.

(5) Spreader is not in resting position

(6) Online calibration switched on

(7) Online calibration switched off



11.5.4 Refill fertiliser

Filling with fertiliser see page 63.

11.5.5 Hydro: Switching spreading disc drive on and off

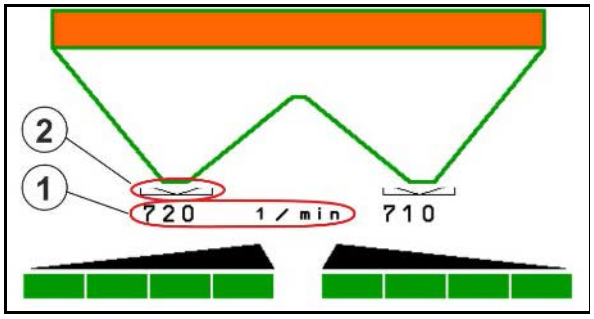
Spreading discs on/off

To switch on, press the key for at least three seconds until the tone stops.

The spreader discs operate at the speed entered in the Machine data menu

(1) Display spreading disc speed

(2) Display spreading discs, switched on



WARNING

Risk of injury from the rotating discs.

Keep people away from the discs.

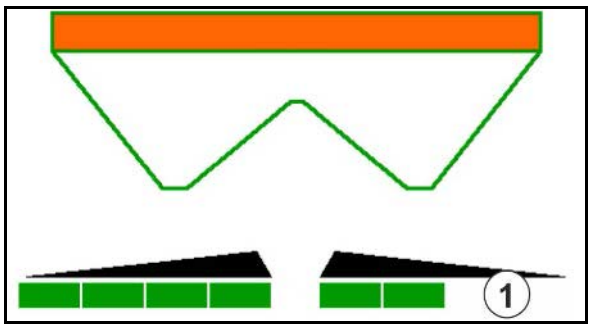
11.5.6 Boom part width sections

Switch on boom part width sections left, right (4 steps)

Switch off boom part width sections left, right (4 steps)

(1) Display two right-hand boom part width sections switched off.

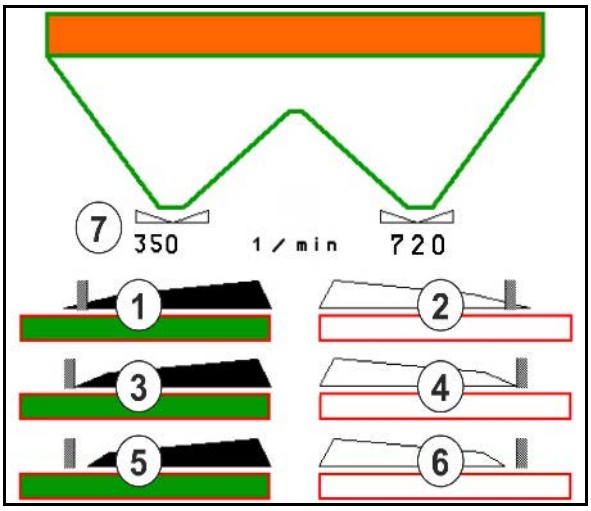
The boom width can be reduced when the shutters are closed.



11.5.7 Boundary spreading

 	Switch on/off trench spreading left/right.
 	Switch on/off boundary spreading left/right.
 	Switch on/off side spreading left/right.

(1) Display border spreading, switched on
(2) Display border spreading, preselected
(3) Display boundary spreading, switched on.
(4) Display boundary spreading, preselected.
(5) Display trench spreading, switched on
(6) Display trench spreading, preselected
(7) Display reduced spreading disc speed



When using the boundary spreading procedure, the switching of individual boom part width sections using the Section Control is overridden.

- For border and trench spreading, enter the data according to the setting chart in the Machine Data menu:
  - o Border side volume reduction.
  - o Border side speed reduction
- Boundary spreading can be selected when the shutters are closed.

Hydraulic spreader disc drive

 	Reduce/increase spreader disc speed for selected type of spreading.

- The boundary spreading speed is increased or reduced by 10 rpm each time the key is pressed.
- The changed border spreading speed is saved in the selected border spreading types for later border spreading, see fertiliser menu.

11.5.8 Switching Section Control (GPS control)

Switching Section Control on and off

WARNING
Risk of personal injury and environmental damage in the ejection area of the fertiliser spreader by fertiliser particles being unintentionally ejected.

Use of Section Control on fertiliser spreaders is only permitted inside the defined field boundaries.

CAUTION

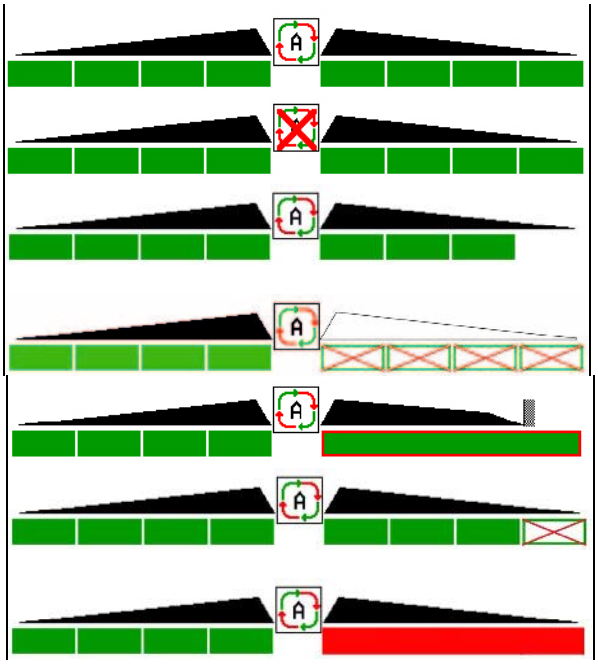
Unintentional fertiliser spreading with Section Control.
Always work with boundary spreading equipment at the boundary.
The boundary spreading equipment overrides the Section Control.

Information for Section Control:

- For safety reasons, define the field boundary after the first field perimeter drive.
- Section Control can always be overridden by:
  - manual part width section control.
  - boundary spreading
  - closing the shutter
- Switch the Section Control on at the terminal first.
  →  Then switch the Section Control on at the fertiliser spreader!
- The spreading disc must be rotating for the Automatic mode. The spreader discs operate at the speed entered in the Machine data menu.

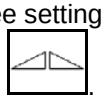
Display:

- Section Control switched on (Automatic mode)
- Section Control switched off (Manual mode)
- Section Control switched on one part width section switched off by Section Control
- Section Control switched on right shutter closed
- Section Control overridden by right boundary spreading equipment
- Section Control overridden by manual switching of the part width section.
- Section Control overridden by closing the shutter manually.



11.6 Procedure for use

11.6.1 Use of fertiliser spreader with mechanical spreading disc drive

1. Select fertiliser menu on the ISOBUS terminal:
   - o Enter the data according to the setting chart.
   - o No weighing spreader: carry out fertiliser calibration.
2. Select Work menu in the ISOBUS terminal.
3. Set the power take-off speed (see setting chart).
4. Move off and open both shutters  .
5. Weighing spreader  :
   - o Start with a calibration travel

   or

   - o Perform online calibration (switch on in Machine Data menu). 6. If starting with boundary, trench or border spreading:

    ,  ,  Select type of boundary spreading and field edge (left / right), and switch on.

→ During spreading, the terminal shows the Work menu. All the settings required for spreading should be entered here.

→ The calculated data is stored for the current job.

After use:

1.  Close both shutters.
2. Switch off power take-off.

11.6.2 Use of fertiliser spreader with hydraulic spreading disc drive

1. Select fertiliser menu on the ISOBUS terminal:
   - o Enter the data according to the setting chart.
   - o No weighing spreader: carry out fertiliser calibration.
2. Select Work menu in the ISOBUS terminal.
3. Actuate tractor control unit *red* to supply the control block with hydraulic fluid.
4.  Switch on spreading discs.
5. Move off and open the shutters  .
6. Weighing spreader:  :
   - o Start with a calibration travel

   or
   - o Perform online calibration (switch on in Machine Data menu).
7. If starting with boundary, trench or border spreading:

    ,  ,  Select type of boundary spreading and edge of the field (left / right), and switch on.

→ During spreading, the terminal shows the Work menu. All the settings required for spreading should be entered here.

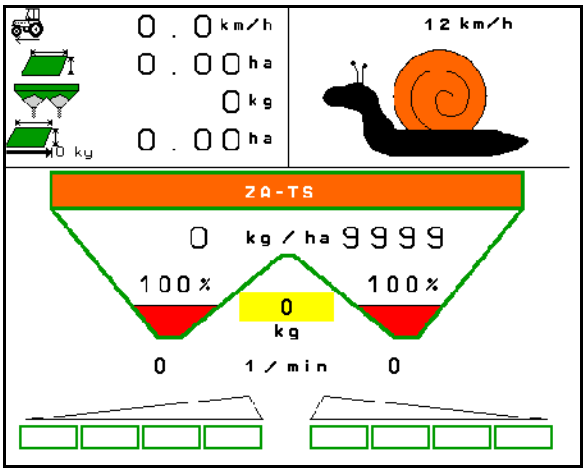
→ The calculated data is stored for the current job.

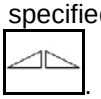
After use:

1.  Close both shutters.
2.  Switch off spreading discs.
3. Actuate tractor control unit *red* to stop the hydraulic fluid supply to the control block.

11.6.2.1 Procedure when spreading slug pellets

he slug pellet mode and the intended forward speed are displayed In the work menu.



1. Select Work menu in the ISOBUS terminal.
2. Set the spreading disc speed (as specified in the setting chart).
3. Move off and open both shutters  .
4. Reach the intended speed quickly () and maintain this speed during the spreading.

WARNING
Over-metering and under-metering with slug pellets.

The desired application rate will only be achieved when maintaining the speed entered. A proportional speed spread rate is currently not possible.

12 AmaPilot Multi-function stick

The AmaPilot enables the operation of all implement functions.

The functions can be selected by pressing with your thumb. For this purpose, two additional levels can be also be switched on.

- Standard level
- Level 2 when trigger on the back is held

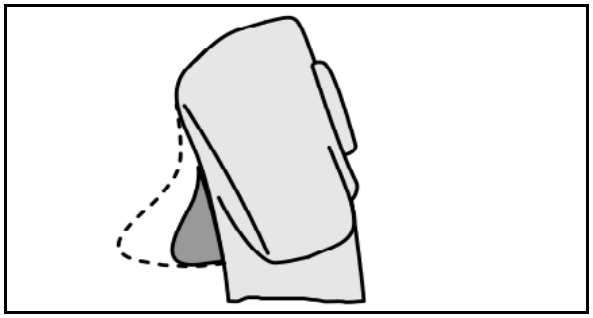


Fig. 1

- Level 3 after switching the lit-up button

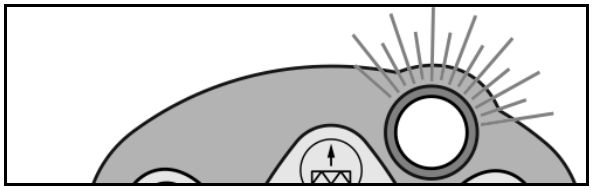
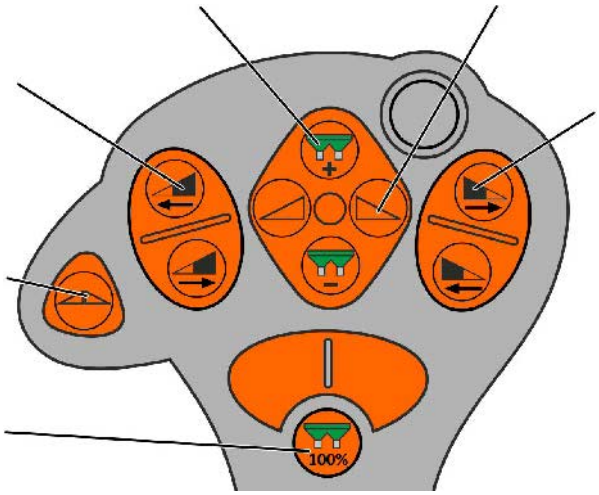


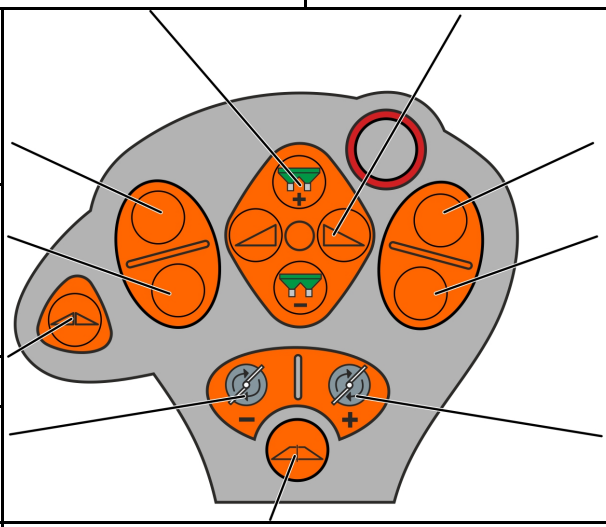
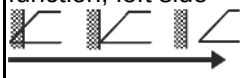
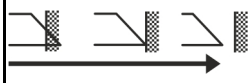
Fig. 2

AmaPilot with fixed assignment

Standard level:  (➔ **Level 2:** 

Reduce / increase application rate		Open / close shutter left, right
Switch on / off boom part width sections, left side Reduce / increase application rate, left side		Switch on / off boom part width sections, right side Reduce / increase application rate, right side
Open / close both shutters		
Application rate to 100%		

Level 3: 

Reduce / increase application rate		Open / close shutter left, right
Gradually switch off boundary spreading function, left side 		Gradually switch off boundary spreading function, right side 
Gradually switch on boundary spreading function, left side 		Gradually switch on boundary spreading function, right side 
Application rate to 100%		
Reduce spreading width for boundary spreading		Increase spreading width for boundary spreading
	Normal spreading on both sides	

13 Maintenance and cleaning

WARNING

Perform maintenance and cleaning only with the spreading discs and agitator shaft drive switched off.

13.1 Cleaning

DANGER

Do not reach into the outlet opening while operating the shutters! Risk of crushing!

To clean the fertiliser spreader, you must have the shutters open so the water and residual fertiliser can drain.

See Empty fertiliser hopper, page 38.

13.2 Notes on an update of the software

The settings and calibration values can be noted in the charts.

After resetting or an update of the software of the machine computer, the settings and calibration values must be r-entered.

Fertiliser menu

Name of the fertiliser				
Calibration factor				
Intended forward speed				
Set disc speed				
Spread disc				
Telescope vane				
Switch-off point				
Switch-on point				
Working width				
Special spreading materials				

Config. border spreading

Set disc speed				
Volume reduction				
Switch Auto TS				

Config. boundary spreading

Set disc speed				
Volume reduction				
Switch Auto TS				

Configure ditch spreading

Set disc speed				
Volume reduction				
Switch Auto TS				

User profile

User name				
Fill level alarm limit				
Quantity increment				

Configure key assignment

Page 1		Page 2	

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Configure multi-function display

Line 1				
Line 2				
Line 3				
Line 4				

Configure ISOBUS

UT Number				
Documentation				
TC number				
Switch SectionControl				
Set the switch points				

Implement menu

Calibration method				
Fertiliser fill level				
Speed source				

Configure the speed source

Speed source				
Wheel imp.				
Simulated speed				

Setup/Implement settings

Spreader model				

Configure spreading disc speed

Hydraulic drive				
Control factor				

Calibrate shutter

Calibrate position left				
Calibration position right				

Configure scale

Weigh cell				
Parameter 1				
Parameter 2				

Configure Limiter/AutoTS

Limiter/AutoTS				
Normal spreading, left side				
Normal spreading, right side				
Bound. spread.left				
Bound. spread.right				

Configure delivery system adjustment

Electrical adjustment				
Calibrate position left				
Calibration position right				

Switch-on delay, switch-off delay

Switch-on delay				
Switch-off delay				

14 Problem

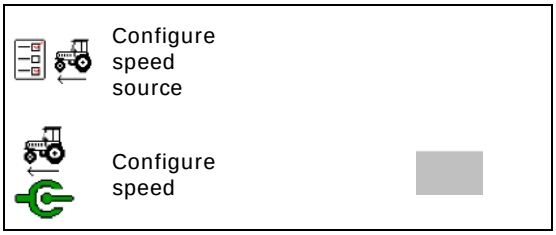
14.1 Failure of the speed signal from the ISO-bus

A simulated speed can be entered in the Machine Data menu as a source for the speed signal.

This allows continuing with spreading without a speed signal.

Proceed as follows to do so:

1. Enter simulated speed.
2. Maintain the simulated speed as you continue spreading.



14.2 Fault table

Number	Message	Type	Cause	Remedial action
F3003	Fill level alarm limit under	Note	The fill quantity that has been weighed by the weigh cell is less than the alarm limit set.	• Refill with fertiliser • Adapt the fill level alarm limit in the implement settings
F3004	Setting motor left does not respond	Alarm	The measuring value of the sensor on the left shutter does not change although the setting motor of the shutter has been switched on.	• Eliminate any damage or interruptions on the cable connector to the setting motor. • Hang the shutter back into the setting motor after the calibration • Replace the defective setting motor (EA356 or EA353)
F3005	Setting motor right does not respond	Alarm	The measuring value of the sensor on the right shutter does not change although the setting motor of the shutter has been switched on.	• Eliminate any damage or interruptions on the cable connector to the setting motor. • Hang the shutter back into the setting motor after the calibration • Replace the defective setting motor (EA356 or EA353)
F3006	Spreading discs not turning	Warning	Hydro only: although the button for switching on has been pressed in the work menu, no speed can be measured on the spreading disc	• Switch on the spreader hydraulic supply • Connect the hydraulic hoses correctly to the tractor • Replace defective wiring harness (no voltage at hydraulic valve) • Eliminate any damage or interruptions on the cable connector to the speed sensor. • Replace defective speed sensor
F3007	Shutter open	Note		Close shutter
F3008	Spreading disc speed cannot be maintained	Note	The speed of the spreading disc deviates from the nominal speed set by at least 10%.	• Adapt the nominal speed • For PTO drives: correct the speed of the PTO shaft • With hydro: increase the oil supply quantity of the tractor
F3009	Metering chamber level is too low	Note	ZG-TS only: when the shutter is open, the voltage of the angle sensor on the fill level flap in the metering chamber is greater than 2V for at least 15 seconds.	• Refill with fertiliser • Ensure for the correct floor belt drive

F3010	Left hopper tip empty	Note	Left filling level sensor is not actuated	• Refill with fertiliser • Eliminate the "fertiliser bridge" in the hopper using appropriate tools • Eliminate any damage or interruptions of the wiring • Replace defective filling level sensor
F3011	Weigh-cell varies steeply	Note	The weigh cell computer NI113 has marked the last weight evaluated as invalid. OR the weight deviates by more than 10 kg/s	• Wait at least 10 seconds until the weight has settled. • Disconnect the spreader from the ISOBUS socket and reconnect again after 10 seconds. • Correct the weigh cell calibration • Replace defective weigh cell • Replace defective weigh cell computer NI113
F3013	Fill level too low minimum content 500 kg	Note	As the online or offline calibration should have started, according to the weigh cell there is less than 500 kg in the hopper.	• Refill with fertiliser
F3015	Calibration not possible left shutter is open	Note	When accessing the calibration menu, the left shutter was opened.	• Close the left shutter in the work menu
F3017	Weigh-cell failed	Warning	No messages was received from the weigh cell computer (NI113) for 2 seconds.	• Rectify fault in the wiring between job computer (NI164) and weigh cell computer (NI113). • Replace defective weigh cell computer (NI113).
F3018	Calibration not possible device not stationary	Note	When accessing the calibration menu, one speed is available.	• Stop the tractor • Set simulated speed = 0
F3019	Calibration not possible setpoint cannot be reached	Note	The amount set in the calibration menu cannot be spread by the spreader.	• Reduce the application rate • Reduce the speed -reduce the working width
F3020	Calibration cancelled fill level too low	Note	The minimum fill level was not reached during the offline calibration	• Refill with fertiliser
F3022	The calibration factor was outside the realistic value 5 times	Note	During the online calibration, the new calibration factor calculated was above 1.4 and below 0.6 five times	• Remove the blockage on the shutter • Calibrate the fertiliser • Calibrate offline • Re-calibrate the weigh cell • Set the special spreading material, rice

F3023	Cleaning hood sensor failed	Alarm	The voltage of the angle sensor on the cleaning hood is greater than 4.5 V or less than 0.5 V	• Eliminate any damage of the wiring • Replace defective angle sensor
F3024	Cleaning hood opened	Alarm	The voltage of the angle sensor on the cleaning hood is greater than 1.6 V	• Close cleaning hood • Align the booms on the sensor correctly • Position the sensor correctly
F3025	Drop-point adjustment job computer has failed	Warning	No messages are received by the drop-point system adjustment machine computer (NI125).	• rectify the fault in the wiring between the job computer (NI164) and drop-point system adjustment machine computer (NI125). • Replace the defective drop-point system adjustment machine computer (NI125)
F3027	Calibration is not possible fill level in metering chamber to low	Note	During the calibration, the voltage at the angle sensor of the fill level flap in the metering chamber of the ZG-TS was greater than 2.0 V for 20 seconds	• Before calibrating, refill with fertiliser • Make sure the oil is flowing • Ensure for the correct floor belt drive
F3028	Calibration factor is outside the limit	Note	During the offline calibration, the new calibration factor calculated was above 1.4 and below 0.6	• Check the shutter for blockages • Repeat the calibration travel • Do not refill during the calibration travel • Calibrate the fertiliser • Re-calibrate the weigh cell • Set the special spreading material, rice
F3029	Setpoint value cannot be maintained	Warning	The desired application rate cannot be spread with the working width and speed	• Reduce the speed • Reduce the application rate • Reduce the working width
F3033	The forward speed source is not available. Please select another source.	Note	The ISOBUS speed signal that has been selected in the menu "Configure source speed" is not available.	• In the menu "Configure source speed", select a speed that is available or the simulated speed. • Correct the settings of the tractor ECU.
F3034	Please note that functions, that are not controlled via ISOBUS, must be switched off separately.	Alarm	The ISOBUS Shortcut Button of the terminal has been pressed (e.g., On / Off button on the AMATRON or the mushroom-head button on the CCI terminal)	• Let go of the Shortcut Button
F3035	Please note that functions, that are not controlled via ISOBUS, must be switched off separately. Please confirm this message.	Alarm	The ISOBUS Shortcut Button of the terminal has been released (e.g., On / Off button on the AMATRON or the mushroom-head button on the CCI terminal)	• Confirm the message

F3036	Attention! Rotating spreading disc	Note	The work menu has been exit when the spreading discs were still switched on.	• Switch off the spreading discs
F3037	Error in calibrating the weigh-cell. Parameter 2 is smaller than 1.0	Note	When calibrating the weigh-cell, a value smaller than 1 was calculated for parameter 2	• Fill the fertiliser at the right time during calibration • Correct the quantity in the field "Enter the filled fertiliser quantity" • Install the weigh cells correctly (ZA: arrow points upwards; ZG: arrow points downwards) • Replace the defective weigh cells • Replace defective weigh cell computer
F3038	Calibration cancelled	Note		
F3039	A speed signal greater than zero has been identified. The simulated speed has been deactivated.	Note	One tractor ECU sends a speed signal > 0km/h to the ISOBUS whereas a simulated speed was set.	• Select the correct speed in the menu "Configure source speed" • Deactivate the tractor ECU (e.g., 0 Imp/100 m)
F3040	Agitator left not active	Warning	No impulses are received by the speed sensor on the left agitator when the electric agitator is switched on.	• Remove the blockage in the agitator • Eliminate damage or interruptions on the cable to the agitator motor • Replace defective agitator motor (EA358)
F3041	Agitator right not active	Warning	No impulses are received by the speed sensor on the right agitator when the electric agitator is switched on.	• Remove the blockage in the agitator • Eliminate damage or interruptions on the cable to the agitator motor • Replace defective agitator motor (EA358)
F3042	Shutter sensor left has failed	Warning	The signal of the angle sensor of the left shutter is less than 0.5 V.	• Eliminate damage or interruptions on the cable to the angle sensor • Replace the defective angle sensor (NH115)
F3043	Shutter sensor right has failed	Warning	The signal of the angle sensor of the right shutter is less than 0.5 V.	• Eliminate damage or interruptions on the cable to the angle sensor • Replace the defective angle sensor (NH115)
F3048	Sensor drop-point adjustment left has failed	Warning	The signal from the path measurement system of the linear drive for the left inlet system position is less than 0.5 V.	• Eliminate damage or interruptions on the cable to the linear drive • Replace defective linear drive (EA355)

F3049	Sensor drop-point adjustment right has failed	Warning	The signal from the path measurement system of the linear drive for the right inlet system is less than 0.5 V.	• Eliminate damage or interruptions on the cable to the linear drive • Replace defective linear drive (EA355)
F3050	Drop-point adjustment left does not react	Warning	Although the linear drive on the left inlet system is switched off, the voltage value of the path measurement system in this drive does not change	• Eliminate the blockage of the inlet system adjustment • Eliminate damage or interruptions on the cable to the linear drive • Replace defective linear drive (EA355)
F3051	Drop-point adjustment right does not react	Warning	Although the linear drive on the right inlet system is switched off, the voltage value of the path measurement system in this drive does not change	• Eliminate the blockage of the inlet system adjustment • Eliminate damage or interruptions on the cable to the linear drive • Replace defective linear drive (EA355)
F3052	Sensor AutoTS left has failed	Warning	The signal of the angle sensor of the left shutter is less than 0.5 V.	• Eliminate damage or interruptions on the cable to the angle sensor • Replace the defective angle sensor (NH115)
F3053	Sensor Auto TS right has failed	Warning	The signal of the angle sensor of the right shutter is less than 0.5 V.	• Eliminate damage or interruptions on the cable to the angle sensor • Replace the defective angle sensor (NH115)
F3054	Target position AutoTS left not adhered to	Warning	The sensor value of the linear drive for the left Auto TS vane does not change and does not have the required value	• Switch the Auto TS again • Remove soiling from the spreading disc • Re-calibrate Auto TS • Eliminate damage or interruptions on the cable to the linear drive • Remove defective linear drive (EA375)
F3055	Target position AutoTS left not adhered to	Warning	The sensor value of the linear drive for the right Auto TS vane does not change and does not have the required value	• Switch Auto TS again • Remove soiling from the spreading disc • Re-calibrate Auto TS • Eliminate damage or interruptions on the cable to the linear drive • Remove defective linear drive (EA375)

F3057	Section control deactivated	Note	The Section Control State changes from 1 to 0. Automatic part width section control has been deactivated by the spreader or terminal.	• Switch on the spreading discs • Switch off the boundary and ditch spreading • Do not operate the spreader by hand when in automatic mode • Eliminate other faults (e.g., shutter sensor failed) • Exit the calibration or implement menu
F3058	Metering chamber sensor failed	Warning	The signal from the angle sensor to the fill level flap in the metering chamber of the ZG-TS is less than 0.5 V.	• Eliminate any damage or interruptions of the wiring • Replace defective angle sensor
F3059	Right hopper tip empty	Note	Right filling level sensor is not actuated	• Refill with fertiliser • Eliminate the "fertiliser bridge" in the hopper using appropriate tools • Eliminate any damage or interruptions of the wiring • Replace defective filling level sensor
F3060	You are going to alter the weigh cell setting	Note		
F3062	Safety functions are deactivated in the diagnostic menu. Read the operator manual to make sure you understand the safety advice.	Note	The diagnosis menu has been called up	
F3063	To empty refer to the operator manual. Do not enter the hopper when the machine is running and make sure no bystanders are put in danger.	Note	The menu for emptying the hopper has been called up.	
F3064	Before calibrating consult the operator manual	Note	The menu "Determine calibration factor" has been called up..	
F3065	Drop-point value not achievable	Note	When using the mobile test rig, the position for the inlet system was calculated that was smaller than 0 or greater than 60.	• Check the implement settings using the setting chart • Repeat spreading trials • Contact fertiliser service

F3068	Risk of personal injury in the ejection area of the fertiliser spreader by fertiliser particles being unintentionally ejected. For use of Section Control, it is necessary to determine the field boundary. Read and observe the Section Control operating manual.	Note	The automatic mode in Section Control was switched on for the first time.	• Read and acknowledge notes
F3069	Special spreading material, slug pellets selected. Speed independent metering is deactivated. Enter intended speed and travel constant.	Note	"Slug pellets" was selected as a special spreading material in the fertiliser settings.	• Read and acknowledge notes
F3070	Use this terminal as standard terminal the future?	Note	The spreader has not found the expected terminal on the ISOBUS and instead of that, has logged onto another terminal.	

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