

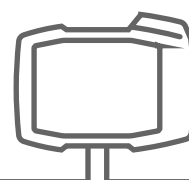


Original operating manual

Control computer

AmaSpread 2

This operating manual is valid as of software version NW355-B.009



SmartLearning



TABLE OF CONTENTS

1	About this operating manual	1	6.4	Configuring the terminal	19
1.1	Diagrams	1	7	Adjusting the implement	20
1.1.1	Warnings and signal words	1	7.1	Configuring the source for the speed signal	20
1.1.2	Further instructions	1	7.1.1	Configuring the speed signal from the tractor	20
1.1.3	Instructions	2	7.1.2	Determining the pulses per 100 m	21
1.1.4	Lists	3	7.1.3	Entering the simulated speed	22
1.1.5	Item numbers in figures	3	7.2	Configuring the low level notification	23
1.2	Other applicable documents	4	7.3	Entering the rate increment for changing the rate	23
1.3	Your opinion is important	4	7.4	Aligning the implement horizontally	24
2	Safety and responsibility	5	7.5	Select method for determining the calibration factor	24
2.1	Road traffic	5	8	Managing products	25
2.2	Maintenance and storage	5	8.1	Creating a new product	25
2.3	Design changes	6	8.2	Selecting or deleting a product	26
2.4	Display	7	8.3	Entering the product data	26
3	Intended use	8	9	Filling the hopper	28
4	Product description	9	10	Determining the calibration factor at a standstill	29
4.1	Function of the control computer	9	11	Working	31
4.2	Overview of the control computer	10	11.1	Spreading fertiliser	31
4.3	Menu selection	10	11.2	Determining the calibration factor manually while driving	32
4.4	Buttons	13	11.3	Spreading on one side	33
4.4.1	Input keys and navigation keys	13	11.4	Adjusting the spread rate	33
4.4.2	Function keys in the Work menu	13	11.5	Switching part-width sections	34
4.5	Work display	14	11.6	Boundary spreading	35
5	Connecting the control computer	16			
6	Basic operation	17			
6.1	Switching the control computer on and off	17			
6.2	Navigating in the menu	17			
6.3	Entering numerical values	18			

11.7	Using the work lights	36
12	Emptying the hopper	37
13	Documenting work	38
14	Calling up information	39
15	Repairing the implement	40
15.1	Calibrating the shutters	40
15.2	Taring the scale	41
15.3	Adjusting the scale	41
15.4	Display diagnosis data	42
16	Troubleshooting	43
17	Appendix	49
17.1	Other applicable documents	49
18	Directories	50
18.1	Glossary	50
18.2	Index	51

About this operating manual

1

CMS-T-00000081-D.1

1.1 Diagrams

CMS-T-005676-C.1

1.1.1 Warnings and signal words

CMS-T-00002415-A.1

Warnings are marked with a vertical bar with a triangular safety symbol and the signal word. The signal words *"DANGER"*, *"WARNING"* or *"CAUTION"* describe the severity of the potential danger and have the following meanings:



DANGER

- Indicates a direct threat with high risk for severe physical injury, such as loss of limbs or death.



WARNING

- Indicates a possible threat with moderate risk for severe physical injury or death.



CAUTION

- Indicates a threat with low risk for light or moderately severe physical injuries.

1.1.2 Further instructions

CMS-T-00002416-A.1



IMPORTANT

- Indicates a risk for damage to the implement.



ENVIRONMENTAL INFORMATION

- Indicates a risk for environmental damage.



NOTE

Indicates application tips and instructions for optimal use.

1.1.3 Instructions

CMS-T-00000473-B.1

Numbered instructions

CMS-T-005217-B.1

Actions that have to be performed in a specific sequence are represented as numbered instructions. The specified sequence of the actions must be observed.

Example:

1. Instruction 1
2. Instruction 2

1.1.3.1 Instructions and responses

CMS-T-005678-B.1

Reactions to instructions are marked with an arrow.

Example:

1. Instruction 1
- ➔ Reaction to instruction 1
2. Instruction 2

1.1.3.2 Alternative instructions

CMS-T-00000110-B.1

Alternative instructions are introduced with the word "or".

Example:

1. Instruction 1

or

Alternative instruction

2. Instruction 2

Instructions with only one action

CMS-T-005211-C.1

Instructions with only one action are not numbered, but rather shown with a arrow.

Example:

► Instruction

Instructions without sequence

CMS-T-005214-C.1

Instructions that do not require a specific sequence are shown as a list with arrows.

Example:

► Instruction

► Instruction

► Instruction

1.1.4 Lists

CMS-T-000024-A.1

Lists without an essential order are shown as a list with bullets.

Example:

● Point 1

● Point 2

1.1.5 Item numbers in figures

CMS-T-000023-B.1

A framed number in the text, e.g. a 1, indicates an item number in an adjacent figure.

1.2 Other applicable documents

CMS-T-00000616-B.1

A list of other applicable documents can be found in the Appendix.

1.3 Your opinion is important

CMS-T-000059-C.1

Dear reader, our operating manuals are updated regularly. Your suggestions for improvement help us to create ever more user-friendly operating manuals. Please send us your suggestions by post, fax or email.

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Safety and responsibility

2

CMS-T-00004961-B.1

2.1 Road traffic

CMS-T-00003620-C.1

Do not use the control computer or control terminal during road travel

If the driver is distracted, it can result in accidents and injuries or even death.

- ▶ Do not operate the control computer or control terminal during road travel.

2.2 Maintenance and storage

CMS-T-00003621-D.1

A short circuit can cause damage

When repair work is performed on the tractor or on a towed or mounted implement, there is a risk of short circuit.

- ▶ *Before you perform repair work,* disconnect all connections between the control terminal or control computer and the tractor.

Overvoltage can cause damage

If welding work is performed on the tractor or on a towed or mounted implement, the control computer or control terminal can be damaged by overvoltage.

- ▶ *Before welding,* disconnect all connections between the control terminal or control computer and the tractor.

Improper cleaning can cause damage

- ▶ Clean the control computer or control terminal only with a moist, soft cloth.

Incorrect operating temperature and storage temperature can cause damage

If the operating temperature and storage temperature are not observed, there can damage to the control computer or control terminal, therefore resulting in malfunctions and dangerous situations.

- ▶ Operate the control computer or control terminal only at temperatures from -20°C to +65°C
- ▶ Store the control computer or control terminal only at temperatures from -30°C to +80°C

2.3 Design changes

CMS-T-00003622-C.1

Unauthorised changes and unauthorised use

Unauthorised changes and unauthorised use can impair your safety and affect the service life and/or function of the control terminal.

- ▶ Only make changes to the control computer or control terminal that are described in the operating manual for the control computer or control terminal.
- ▶ Use the control computer or control terminal according to its intended use.
- ▶ Do not open the control computer or control terminal.
- ▶ Do not pull on the lines.

2.4 Display

CMS-T-00003624-B.1

Risk of accident due to faulty display screens

If the display is faulty or the view on the screen is limited, functions can be accidentally activated and therefore trigger implement functions. This can result in injury or death.

- ▶ *If the view on the display screen is limited,*
stop operations.
- ▶ *If the display screen is faulty,*
restart the control computer or the control terminal.

Risk of accident due to improper swiping gesture

With improper swiping gestures, buttons of the implement controls can be accidentally actuated and therefore trigger implement functions. This can result in injury or even death.

- ▶ Start the swipe gesture at the edge of the display.

Intended use

3

CMS-T-00005429-B.1

- The control computer is used to control agricultural implements.
- The operating manual is part of the control computer. The control computer is solely intended for use in compliance with this operating manual. Uses of the control computer that are not described in this operating manual can lead to serious personal injuries or even death and to implement and material damage.
- Uses other than those specified under the intended use are considered as improper. The manufacturer is not liable for any damage resulting from improper use, solely the operator is responsible.

Product description

4

CMS-T-00008270-B.1

4.1 Function of the control computer

CMS-T-00008235-B.1

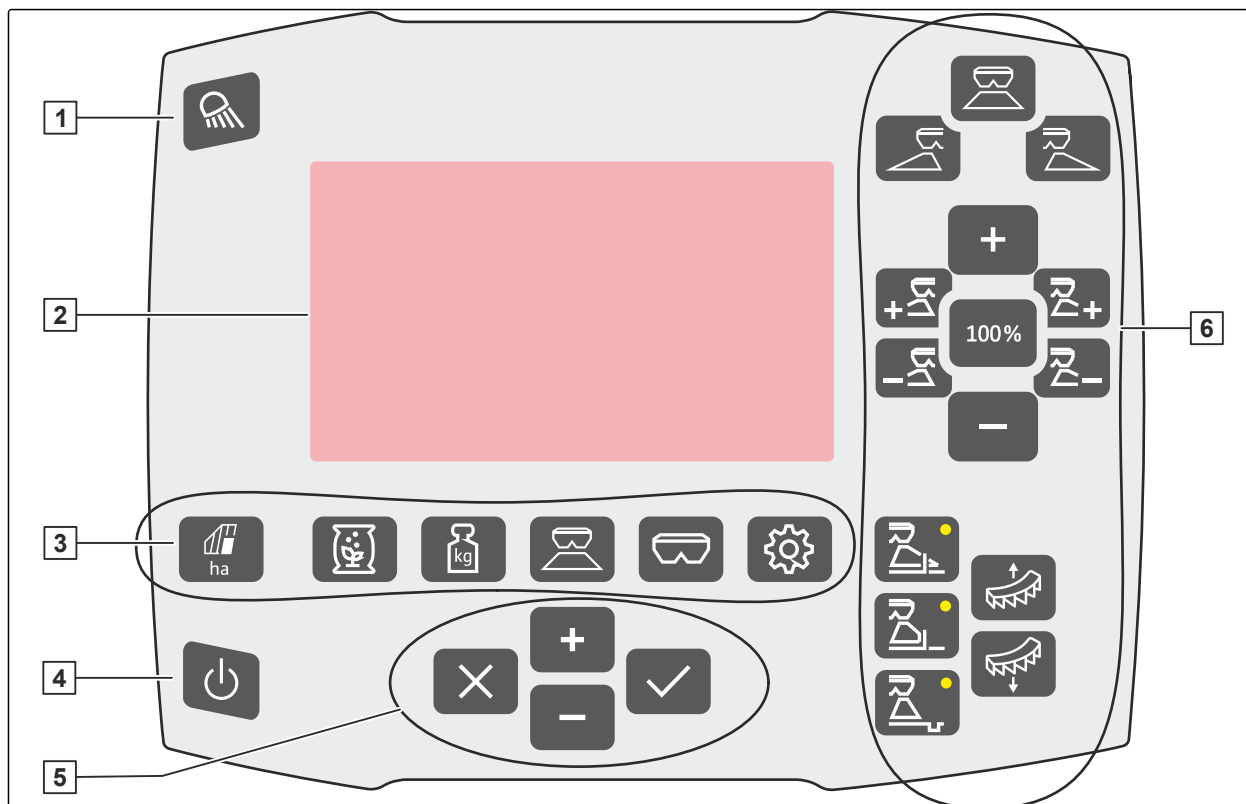
The AmaSpread 2 control computer controls the implement functions and serves as a display terminal.

The control computer offers the following functions:

- Starting or stopping fertiliser spreading
- Determining the calibration factor for rate-precise fertiliser spreading while driving
- Switching other fertiliser spreading functions
- Filling the implement
- Managing products
- Calling up the documentation
- Switching the work lights on or off
- Calling up information

4.2 Overview of the control computer

CMS-T-00008793-B.1



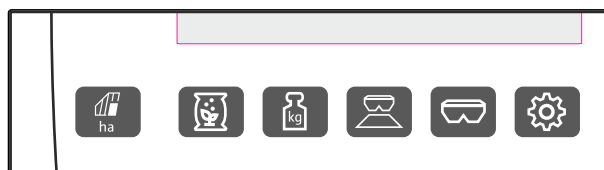
CMS-I-00006023

- | | |
|-------------------------|-------------------------------|
| 1 Work lights | 4 Switching on and off |
| 2 Display | 5 Input and navigation |
| 3 Menu selection | 6 Work menu |

4.3 Menu selection

CMS-T-00008246-B.1

Various data is shown in the menus. The data can be adjusted.



CMS-I-00006024



The "Documentation" menu shows the work data.

DOCUMENTATION			
3.3 h	10 kg	0.81 ha	→ 0
3.3 h	483 kg	68:53 ha	

CMS-I-00006025



The "Products" menu shows the product data and enables product-specific implement settings.

FERT.
– Calcium cyanamide

Application rate

120 kg/ha

Calibration factor

1,36

Working width

33

Other fertiliser settings

CMS-I-00006026



The "Scale" menu determines the calibration factor with the scale.

- 1 Automatic calibration is selected
- 2 Hopper content
- 3 Calibration factor
- 4 Start the manual calibration

1 2 3 4

WAAGE

1.36

2567 kg

Einstellungen

CMS-I-00006059



The "Work" menu shows the work data and controls the implement during operation.

0.0 km/h

958.80 ha

0 kg/ha
0 kg/ha

100%
100%

ON

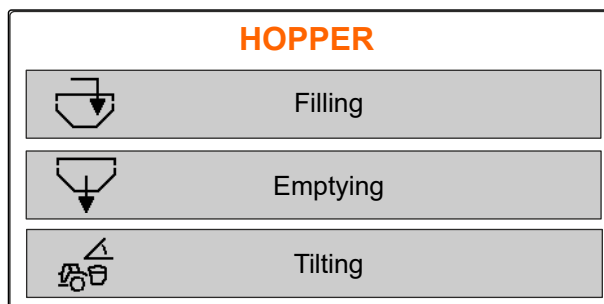
1.48

4794 kg
0
1/min

CMS-I-00006211



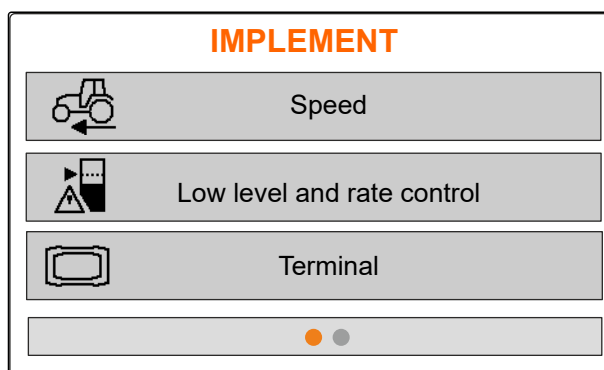
The "*Hopper*" menu contains "*Filling*", "*Emptying*" and "*Tilting*", if a tilt sensor is installed.



CMS-I-00006057



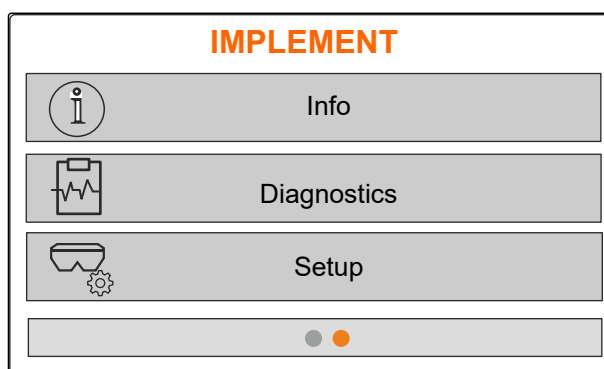
The "*Implement*" menu enables implement settings.



CMS-I-00006056



The second page of the "*Implement*" menu shows the implement data and enables implement settings.



CMS-I-00006227

4.4 Buttons

CMS-T-00008247-B.1

4.4.1 Input keys and navigation keys

CMS-T-00008248-A.1



Increase value or navigate upwards in the list



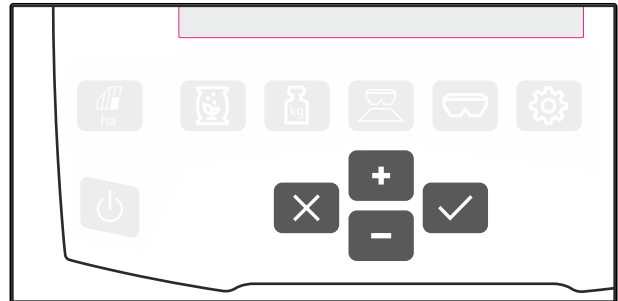
Reduce value or navigate downwards in the list



Cancel input or back to the previous menu



Confirm

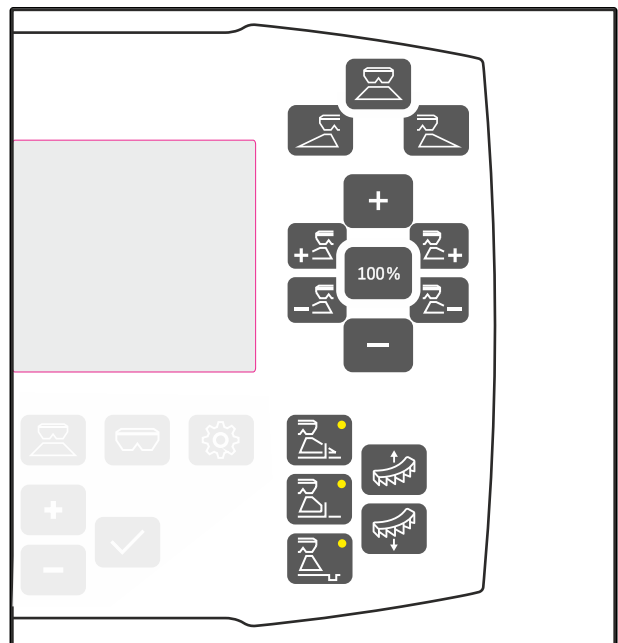


CMS-I-00006030

4.4.2 Function keys in the Work menu

CMS-T-00008249-B.1

Arrangement of the function keys









CMS-I-00006029






Open or close both shutters	Open or close the left shutter	Open or close the right shutter

4 | Product description

Work display

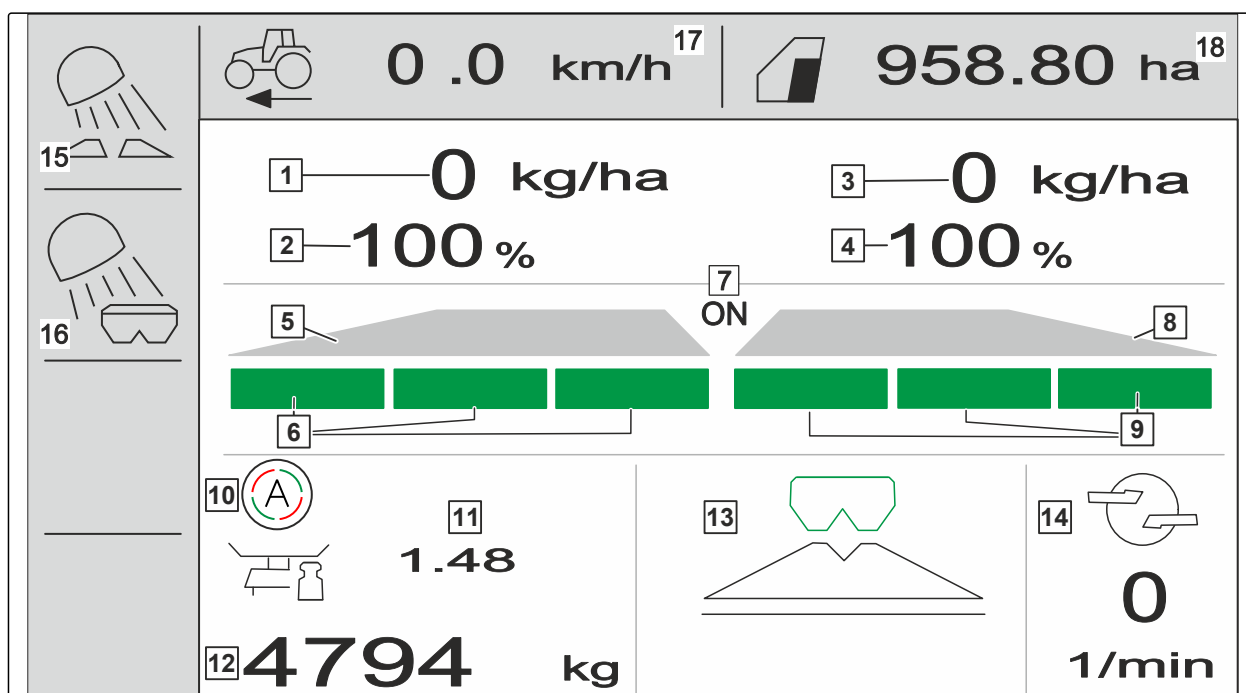
	100%	
Increase the spread rate on both sides by the rate increment	Set the spread rate to 100 %	Reduce the spread rate on both sides by the rate increment

			
Switch on part-width sections from the left	Switch off part-width sections from the left	Switch on part-width section from the right	Switch off part-width sections from the right
Increase the spread rate on the left by the rate increment when pressing the button for at least 3 seconds	Reduce the spread rate on the left by the rate increment when pressing the button for at least 3 seconds	Increase the spread rate on the right by the rate increment when pressing the button for at least 3 seconds	Reduce the spread rate on the right by the rate increment when pressing the button for at least 3 seconds

				
Switch border spreading on or off	Switch boundary spreading on or off	Switch ditch spreading on or off	Raise limiter	Lower limiter

4.5 Work display

CMS-T-00008827-A.1



CMS-I-00006058

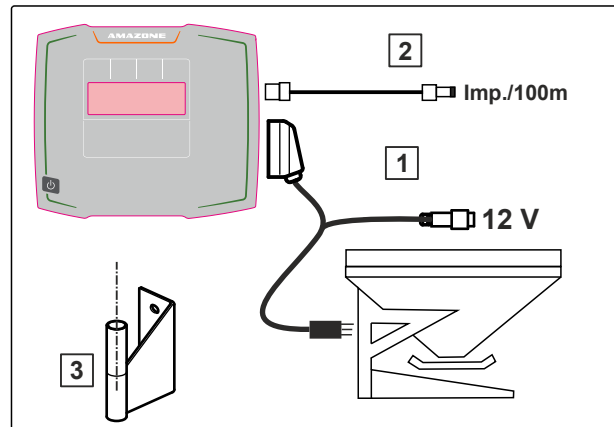
- | | |
|---|---|
| 1 Spread rate on the left | 10 Automatic calibration switched on |
| 2 Spread rate on the left in % | 11 Calibration factor |
| 3 Spread rate on the right | 12 Hopper fill level |
| 4 Spread rate on the right in % | 13 Spreading method |
| 5 Spread fan on the left | 14 Spreading disc speed |
| 6 Part-width sections on the left | 15 Work area lighting |
| 7 Spreading switched on or off on both sides | 16 Hopper lighting |
| 8 Spread fan on the right | 17 Forward speed |
| 9 Part-width sections on the right | 18 Worked area |

Connecting the control computer

5

CMS-T-00008829-B.1

1. Place the control computer on the holder **3** in the tractor cab.
2. Connect the connection cable **1** to the tractor power supply.
3. Connect the connection cable **1** to the control computer.
4. Connect the connection cable **2** for the speed signal to the signal socket.



CMS-I-00006212



Basic operation

6

CMS-T-00008273-B.1




6.1 Switching the control computer on and off

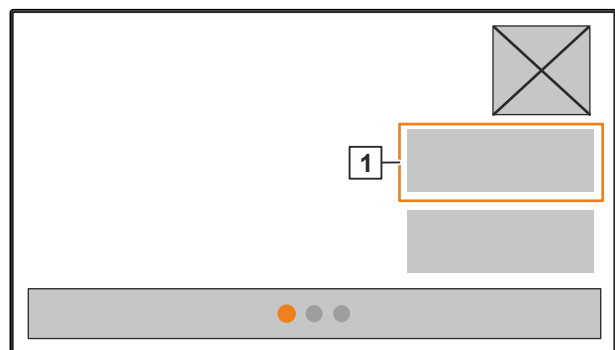
CMS-T-00008830-B.1

- ▶ *To switch on the control computer,*
press and hold the on/off button .
- ➔ An acoustic warning signal is emitted.
- ▶ *To switch off the control computer,*
press and hold the on/off button .

6.2 Navigating in the menu

CMS-T-00008831-B.1

- ▶ *To make a selection,*
select a grey window with  or .
- ➔ The selected input window  is outlined in orange.




CMS-I-00006083

-  Confirm the selection.

or

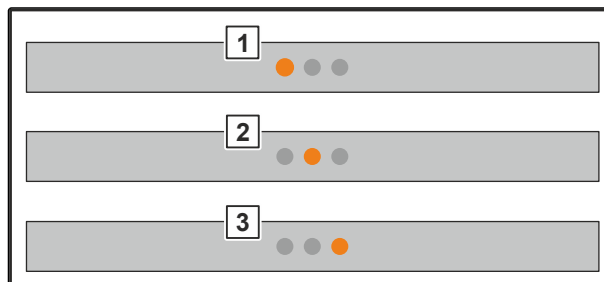
-  Cancel the selection or exit the menu.

- *To change the menu page,*
 select the page display and confirm.

1 Page 1 will be shown.

2 Page 2 will be shown.

3 Page 3 will be shown.




CMS-I-00006082

6.3 Entering numerical values


CMS-T-00008850-A.1

1. Select and confirm the input window.

2.  Increase the value incrementally

or

To rapidly increase the numerical value,
press and hold the button.

3.  Reduce the value incrementally

or

To rapidly reduce the numerical value,
press and hold the button.

4.  Confirm entry

or


-  Cancel entry.

6.4 Configuring the terminal

CMS-T-00008854-B.1

The following parameters can be set:

- Region and language
- Display illumination
- Speed
- Delete saved pool

1.  Call up "*Implement*" menu.
2. Select "*Terminal*".

Adjusting the implement

7


CMS-T-00008277-B.1

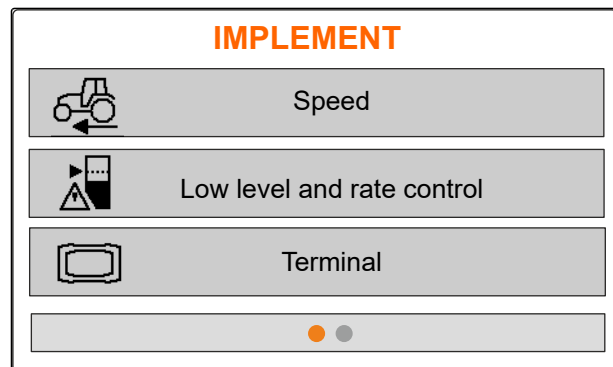
7.1 Configuring the source for the speed signal

CMS-T-00008860-B.1

7.1.1 Configuring the speed signal from the tractor

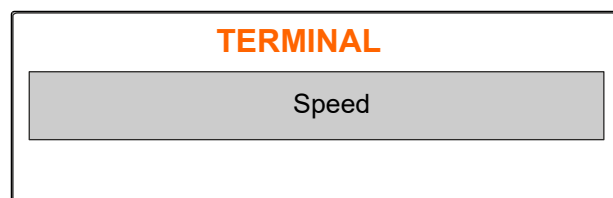
CMS-T-00008864-B.1

1.  Call up "Implement" menu.
2. Select "Terminal".




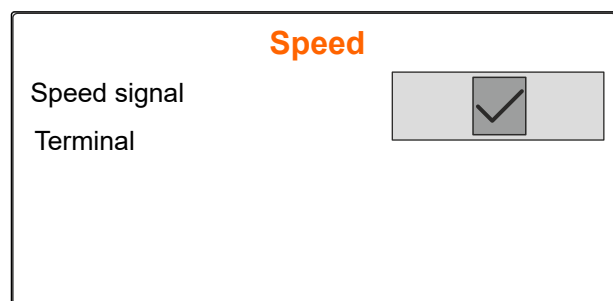
CMS-I-00006087

3. To be able to select the "Signal socket" as the speed source in the settings, call up "Speed".



CMS-I-00006333

4. Confirm "Terminal speed signal" with .



CMS-I-00006334

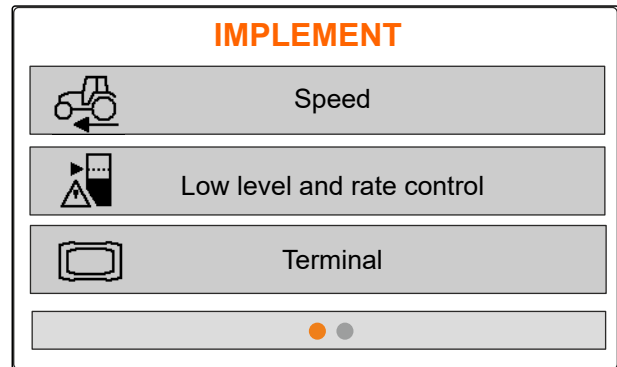
To control electric metering drives, a speed signal is required. A speed signal from the tractor can be used for this.

5. To configure the "Speed signal",



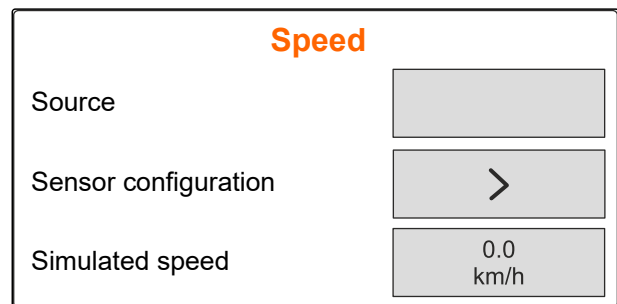
Call up "Implement" menu.

6. Select "Speed".



CMS-I-00006087

7. Select "Signal socket" under "Source".



CMS-I-00006086

7.1.2 Determining the pulses per 100 m

CMS-T-00008863-B.1

To determine the following values, the control computer needs the pulses per 100 m:

- Actual forward speed
- Calculation of the speed-dependant metering.

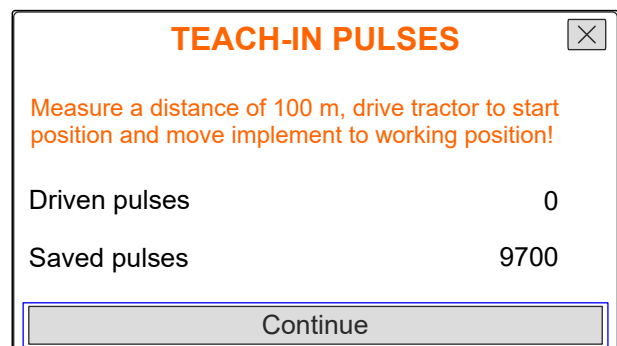


NOTE

The "Pulses per 100 m" calibration factor must be determined under operating conditions.

If 4-wheel drive is being used while seeding, the 4-wheel drive must be switched on when determining the pulses per 100 m.

1. Measure a distance of 100 m.
2. Mark the start point and end point.
3. Drive up to the start point.
4. Select "Continue".



CMS-I-00005018

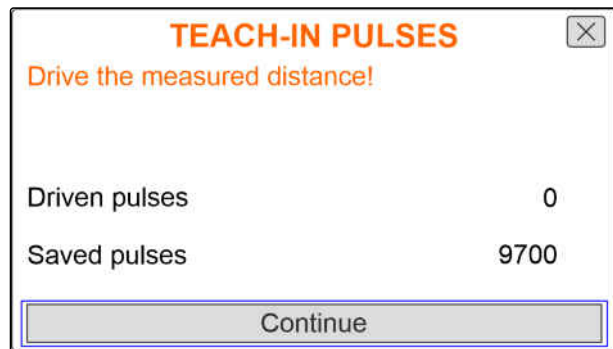
7 | Adjusting the implement

Configuring the source for the speed signal

5. Drive to the end point.

➔ The "Driven pulses" will be counted.

6. Select "Continue".



TEACH-IN PULSES

Drive the measured distance!

Driven pulses 0

Saved pulses 9700

Continue

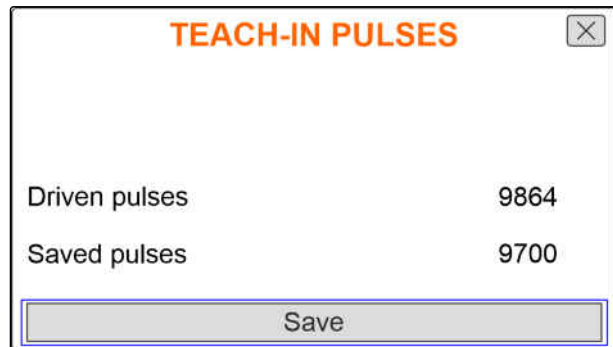
CMS-I-00005019

7. To accept the value,
select "Save"

or

To discard the value,

select ✕.



TEACH-IN PULSES

Drive the measured distance!

Driven pulses 9864

Saved pulses 9700

Save

CMS-I-00005020


7.1.3 Entering the simulated speed

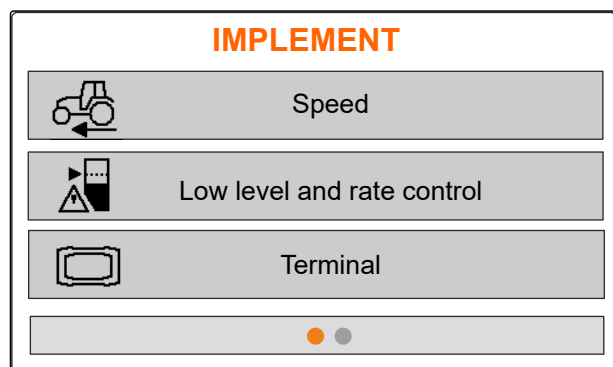
CMS-T-00008861-A.1

To control electric metering drives, a speed signal is required. If no speed signal is available, the simulated speed can be used.


NOTE


The simulated speed must be maintained during operation. When a speed signal is detected, the simulated speed will be deactivated.


-  Call up "Implement" menu.
- Select "Speed".
- press ✓.



IMPLEMENT

 Speed

 Low level and rate control

 Terminal

Progress bar: ● ●

CMS-I-00006087

4. Under "Source", select "Simulated".
5. Under "Simulated speed", enter the desired speed.


Speed

Source	
Sensor configuration	>
Simulated speed	0.0 km/h


CMS-I-00006086


7.2 Configuring the low level notification


CMS-T-00008865-A.1

1.  Call up "Implement" menu.
2. Select "Low level and rate control".
3. If the low level notification should be activated, Mark the box for "Notification when hopper empty".
4. Enter the "Fill level alarm limit".

IMPLEMENT


Speed


Low level and rate control


Terminal

CMS-I-00006087


LOW LEVEL

Notification when hopper empty	<div style="border: 1px solid black; width: 20px; height: 20px; margin: 0 auto; position: relative;"> </div>
Fill level alarm limit	250 kg
Quantity increments	10 %


CMS-I-00006089


7.3 Entering the rate increment for changing the rate


CMS-T-00008866-B.1

1.  Call up "Implement" menu.
2. Select "Low level and rate control".

IMPLEMENT


Speed


Low level and rate control



Terminal

CMS-I-00006087

7 | Adjusting the implement

Aligning the implement horizontally

- Enter the "Rate increment" for the percent change in the spread rate.


LOW LEVEL	
Notification when hopper empty	
Fill level alarm limit	250 kg
Quantity increments	10 %

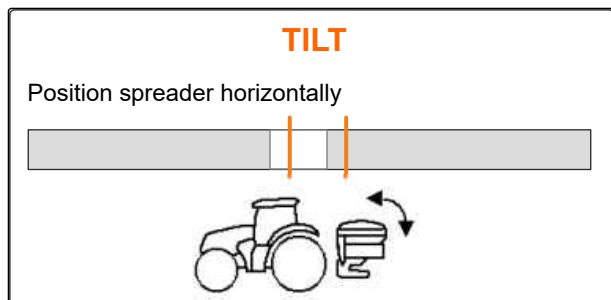
CMS-I-00006089

7.4 Aligning the implement horizontally

CMS-T-00008252-A.1

If the implement is equipped with a tilt sensor, the hopper can be aligned horizontally to the ground.


-  Call up the "Hopper" menu.
- Select "Tilt".
- Align the implement using the top link so that the lines frame the white area.



CMS-I-00006092



7.5 Select method for determining the calibration factor

CMS-T-00008253-B.1

-  Call up the "Scale" menu.
- Select "Settings".
- To constantly determine the calibration factor while spreading, select "Automatic (online)" under "Working weighing method"

or

To determine the calibration factor with a calibration run when beginning spreading operation, select "Manual".

SCALE	
Weighing procedure work	Automatic (online)
Tare the scale	
Adjust the scale	

CMS-I-00006094

Managing products

8


CMS-T-00008271-B.1

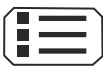
8.1 Creating a new product


CMS-T-00008889-B.1

Each product can be recorded with a name and date.
A maximum of 6 products can be created on 3 pages.

- 1. Park the tractor on a level surface with solid ground.

- 2.  Call up the "Product" menu.

- 3.  Select the product list.

- 4.  Add a new product.

- ➔ A new product has been created and activated.
- ➔ The new product is named "Fertiliser" and has default product data.

FERT. – Calcium cyanamide

Application rate

120 kg/ha

Calibration factor

1,36

Working width

33

Other fertiliser settings

CMS-I-00006026

SELECT FERTILIS.

Calcium cyanamide

120.0 kg/ha

33.0 m

1.36

☒

Fertiliser

200.0 kg/ha

24.0 m


1.00


☐

CMS-I-00006133

8.2 Selecting or deleting a product

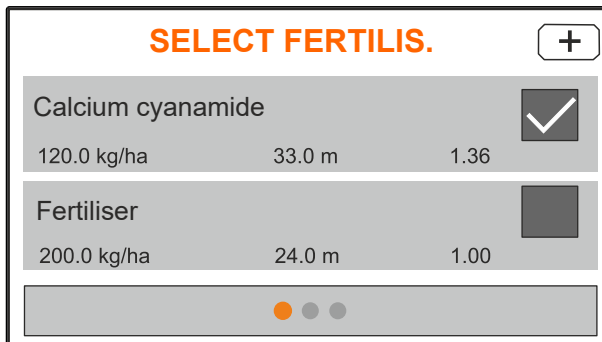
CMS-T-00009043-B.1

1.  Call up the "Product" menu.

2.  Select the product list.

3. Scroll if necessary.

4. Select the product and confirm.



SELECT FERTILIS. +

Calcium cyanamide	120.0 kg/ha	33.0 m	1.36	<input checked="" type="checkbox"/>
Fertiliser	200.0 kg/ha	24.0 m	1.00	<input type="checkbox"/>

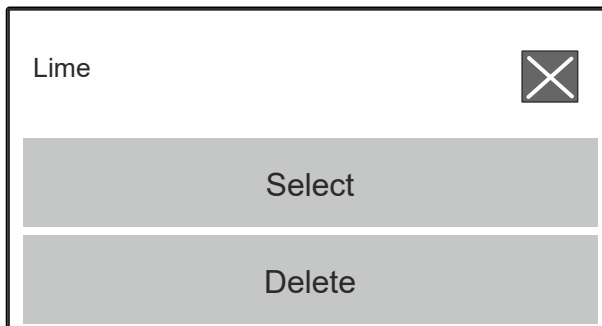
CMS-I-00006133

5. Edit the product with "Select", "Delete"

or



Cancel.



Lime


Select

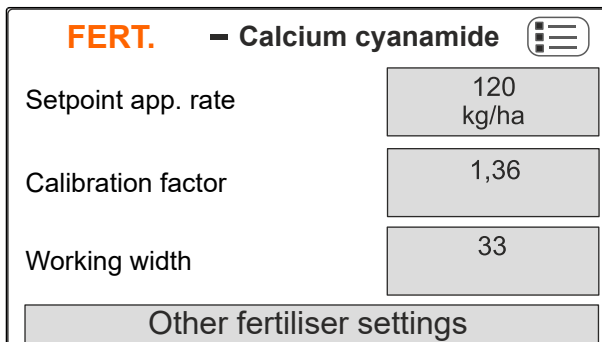
Delete


CMS-I-00006136

8.3 Entering the product data

CMS-T-00008941-B.1

1.  Call up the "Product" menu.
2. Enter the desired "target spread rate".
3. Enter the "Calibration factor" from the setting chart.
4. Enter the desired "Working width".
5. Select "Other fertiliser settings".
6. Select the product under "Fertiliser type".
7. Under "Limiter position", enter the value from the setting chart for the desired boundary spreading type.
8. Select "Spreader unit".



FERT. - Calcium cyanamide 

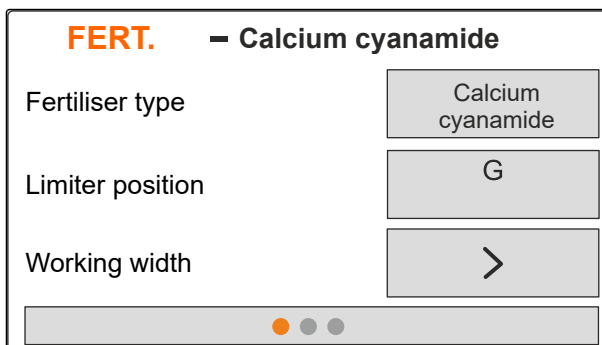
Setpoint app. rate: 120 kg/ha

Calibration factor: 1,36

Working width: 33

Other fertiliser settings

CMS-I-00006169



FERT. - Calcium cyanamide

Fertiliser type: Calcium cyanamide

Limiter position: G

Working width: >

CMS-I-00006132

9. Enter the *"Spreading disc nominal speed"* from the setting chart.
10. Enter the *"Spreading vane position"* from the setting chart for the long and short spreading vane.
11. Enter the installed spreading discs under *"Spreading disc"*.

SPREADER UNIT

Spreading disc nominal speed	720 l/min
Spreading vane position	<div style="border: 1px solid gray; padding: 2px 10px; margin: 0 5px;">10</div> <div style="margin: 0 5px;">/</div> <div style="border: 1px solid gray; padding: 2px 10px; margin: 0 5px;">40</div>
Spreading disc	v2

CMS-I-00006129

12. Under *"Border spreading"*, enter the *"Nominal speed"* on the boundary side, the *"Rate reduction"* and *"Limiter height"* for border spreading.
13. Under *"Boundary spreading"*, enter the *"Nominal speed"* on the boundary side, the *"Rate reduction"* and *"Limiter height"* for boundary spreading.
14. Under *"Ditch spreading"*, enter the *"Nominal speed"* on the boundary side, the *"Rate reduction"* and *"Limiter height"* for ditch spreading.
15. Under *"Spreading material"*, select *"Fertiliser"* or *"Special spreading material"*.

FERT.
-
Fertiliser

Border spreading	>
Boundary spreading	>
Ditch spreading	>

CMS-I-00006131

FERT.
-
Fertiliser


Spreading material	Fertiliser
Determine calibration factor	⚙️

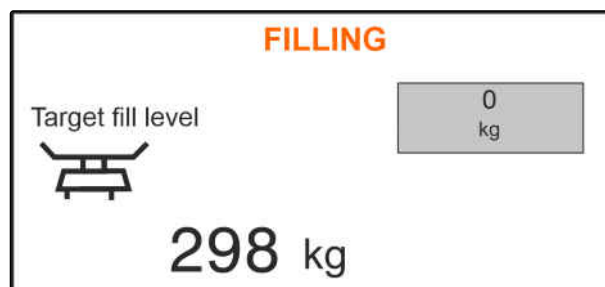
CMS-I-00006130

Filling the hopper

9

CMS-T-00008267-B.1

1.  Call up the "Hopper" menu.
2. Select "Filling".
3. Enter the "Target fill level".
4. Fill the implement until the target fill level has been reached.



CMS-I-00006090



NOTE

If the work lights are installed, the spread fan illumination indicates the current target fill level during the filling procedure.

Light	Status of the target fill level
Flashing slowly	Starting at 500 kg before reaching the target fill level
Flashing faster	Starting at 100 kg before reaching the target fill level
Continuously lit	When the target fill level is reached

Determining the calibration factor at a standstill

10

CMS-T-00008892-B.1

1. Keep the spreading disc drive switched off.
2. Remove the spreading discs.
3. Install the calibration chute on the left spreading disc.
4. Place a collection bucket underneath.



5. Call up the "Product" menu.

6. Select "Other fertiliser settings".



7. Call up the "Calibration" menu.

8. Observe the implement operating manual.

9. Select "Continue".

10. Take the calibration factor from the setting chart and enter it.

11. Select "Continue".

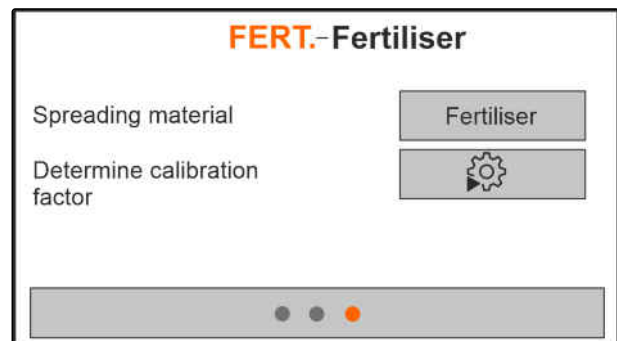
12. Enter the intended speed.

13. Enter the working width.

14. Select "Continue".

15. Check the target spread rate.

16. Select "Continue".



CMS-I-00006229

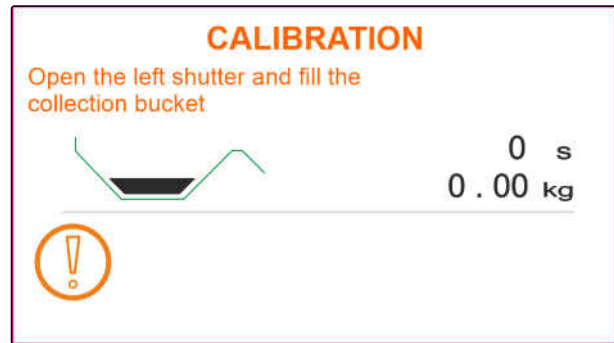
17. Switch on the spreading disc drive.

18. Open the left shutter.

19. *When the collection bucket is full,*
close the left shutter.

20. *Switch off the spreading disc drive.*

21. Weigh the collected quantity.



CMS-I-00006174

22. Enter the weight of the collected quantity.

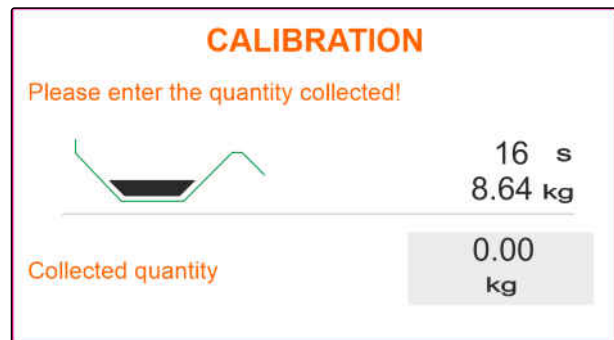
23. Select "Continue".

➡ The new calibration factor will be displayed.

24. Save the calibration factor

or

To optimise the calibration factor,
repeat the calibration.



CMS-I-00006175

Working

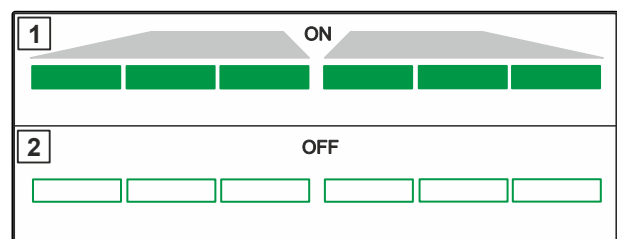
11

CMS-T-00008274-B.1

11.1 Spreading fertiliser

CMS-T-00008257-B.1

- 1 Shutter open
- 2 Shutter closed




CMS-I-00006176



REQUIREMENTS

- ✓ The implement is configured
- ✓ The product data is entered
- ✓ The product is selected
- ✓ The weighing method for determining the calibration factor is selected
- ✓ Alternative: Determine the calibration factor at a standstill before operation

1.  Call up the "Work" menu.
2. Drive onto the field.
3. Run the spreading discs at the nominal speed.
4. *If the "Manual" weighing method is selected, start the calibration run, see page 32.*
5. *When the switch-on point according to the setting chart has been reached,*



open the shutter.

6. When the switch-off point according to the setting chart has been reached,





close the shutter.


7. When work is finished,
stop the spreading disc drive.

11.2 Determining the calibration factor manually while driving

CMS-T-00008977-B.1

1.  Call up the "Scale" menu.

2.  Start the manual calibration.

3.  Call up the "Work" menu.

4. Drive onto the field.

5. Run the spreading discs at the nominal speed.

6. When the switch-on point according to the setting chart has been reached,



open the shutter.


- ➔ The quantity spread during the calibration procedure will be displayed.


7. When at least 250 kg of fertiliser has been spread,

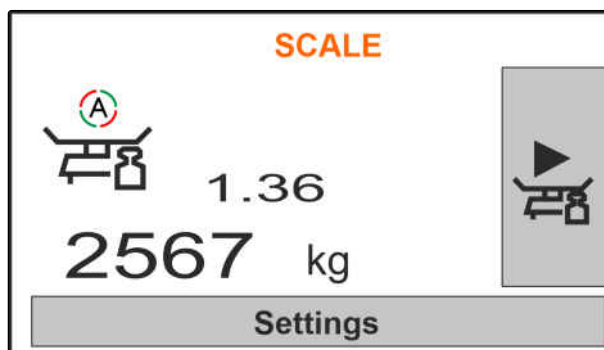


close the shutter.

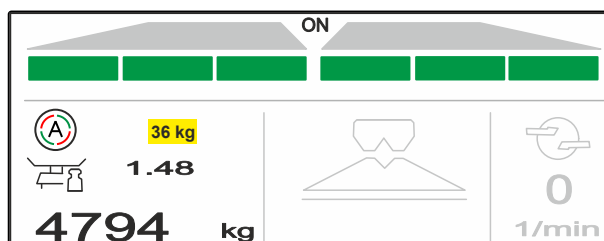
8. Come to a stop and interrupt the spreading disc drive.

9.  Call up the "Scale" menu.

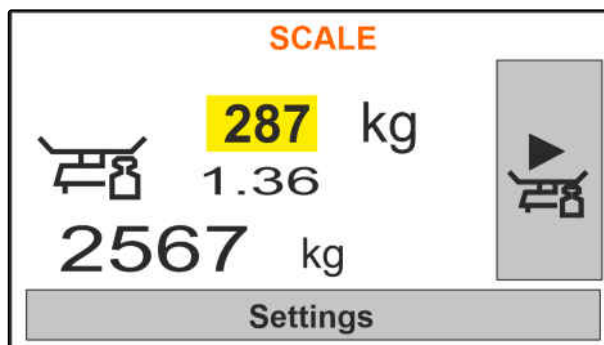
10.  Stop the manual calibration.



CMS-I-00006214



CMS-I-00006215



CMS-I-00006217

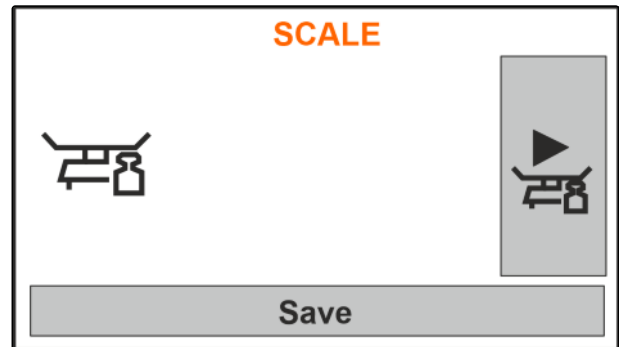
11. Save the calibration factor

or



Cancel.

12. To optimise the calibration factor, repeat the calibration run.

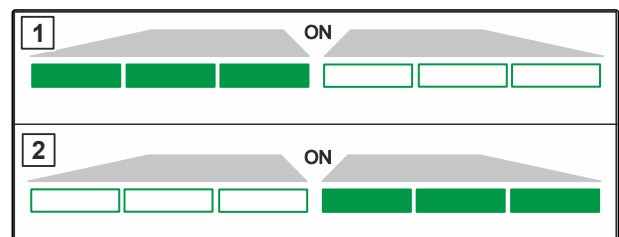


CMS-I-00006218


11.3 Spreading on one side

CMS-T-00008258-A.1


- 1 Left shutter open
- 2 Right shutter open



CMS-I-00006182

- ▶  Open and close the left shutter



or

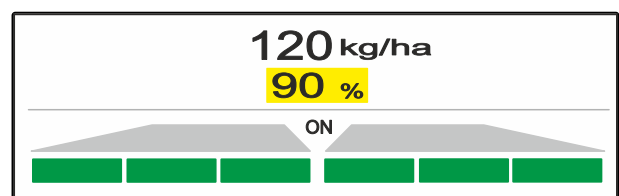
- ▶  Open and close the right shutter.

11.4 Adjusting the spread rate





CMS-T-00008260-A.1

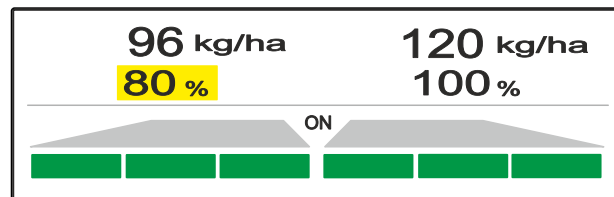
The setpoint for the spread rate can be increased or reduced before or during operation.

- ▶  Increase the spread rate on both sides by the rate increment.
- ▶  Reduce the spread rate on both sides by the rate increment.
- ▶ 100% Change the spread rate on both sides to 100 %.



CMS-I-00006221

- ▶  To increase the spread rate on the left by the rate increment, press and hold the button.
- ▶  To reduce the spread rate on the left by the rate increment, press and hold the button
- ▶  To increase the spread rate on the right by the rate increment, press and hold the button
- ▶  To reduce the spread rate on the right by the rate increment, press and hold the button.







CMS-I-00006220

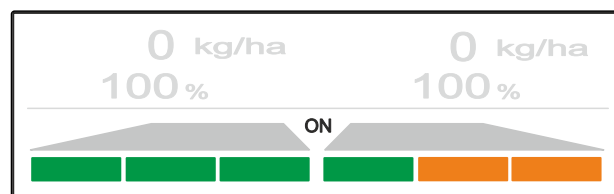
11.5 Switching part-width sections

CMS-T-00008980-A.1

The working width is divided into 6 part-width sections. The part-width sections can be switched off beginning from the outside.

Part-width sections can be pre-selected before operation or switched during operation.

- ▶  Switch on switched off part-width section from the left.
- ▶  Switch off part-width section from the left.
- ▶  Switch on switched off part-width section from the right.
- ▶  Switch off part-width section from the right.



CMS-I-00006219

11.6 Boundary spreading

CMS-T-00008259-B.1

The boundary spreading method can be selected before beginning operation or can be switched on and off during operation.

The boundary spreading can be adjusted via the tilt adjustment of the boundary spread deflector.

The selected boundary spreading method is shown with the LED light.

Normal spreading, no boundary spreading method selected.

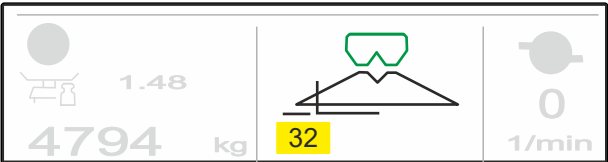


CMS-I-00006186



"Border spreading" is selected.

The tilt angle of the boundary spread deflector is shown.

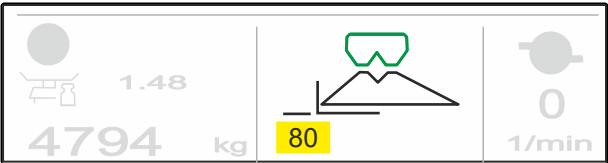


CMS-I-00006185



"Boundary spreading" is selected.

The tilt angle of the boundary spread deflector is shown.

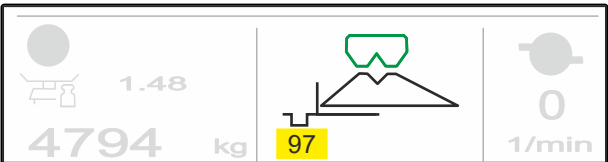


CMS-I-00006184



"Ditch spreading" is selected.

The tilt angle of the boundary spread deflector is shown.



CMS-I-00006183

1. Select the boundary spreading method.
2. *To increase the working width on the boundary side,*



raise the boundary spread deflector.

or

To reduce the working width on the boundary side,





lower the boundary spread deflector.

- ➔ The changed tilt of the boundary spread deflector is saved in the Product menu.

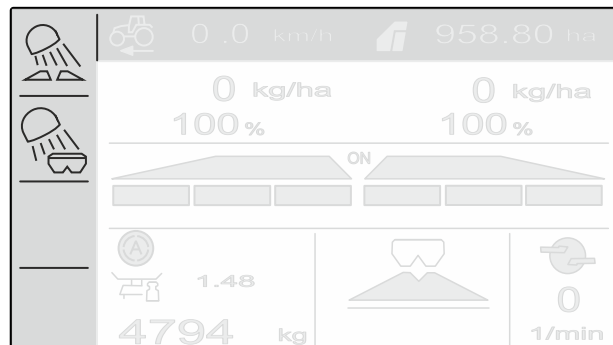
3. Deselect "Boundary spreading" again.

11.7 Using the work lights

CMS-T-00008963-B.1

1.  Switch on the work lights.
2. *When*  *is pressed several times in quick succession,*
the work lights switch the following functions consecutively:

- All work lights switched on
- Only spread fan illumination switched on
- Only hopper lighting switched on
- All work lights switched off




CMS-I-00006188

Emptying the hopper

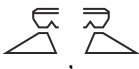

12

CMS-T-00008276-A.1

1. Remove the spreading discs.



2.  Call up the "Hopper" menu.

3. Select "Emptying".

4.  ,  Open the shutter.

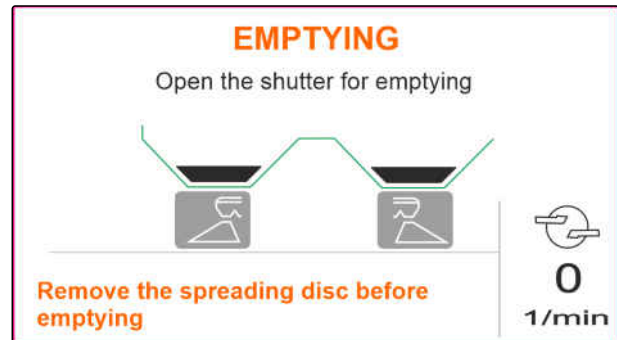
5. Switch on spreading disc drive if necessary.

➔ The agitator movement supports the emptying process.

6.  ,  Close the shutter after emptying.

7. Switch off the spreading disc drive.

8. The current hopper content will be shown.



CMS-I-00006193




Documenting work

13



CMS-T-00008272-A.1

The following work data will be documented and displayed:

- 1 Daily data
- 2 Total data
- 3 Working time
- 4 Spread quantity
- 5 Worked area

	3	4	5	
	DOCUMENTATION			
				
1	3.3 h	10 kg	0.81 ha	→ 0
2	3.3 h	483 kg	68:53 ha	


CMS-I-00006192

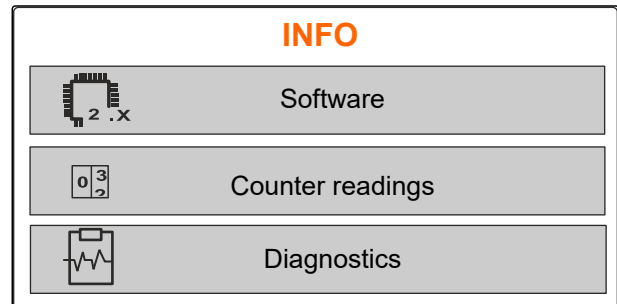
-  Call up the "Documentation" menu.
-  Delete the daily data.

Calling up information

14

CMS-T-00008265-B.1

1.  Call up "Implement" menu.
2. Select "Info".
3. *To call up the software information or the implement identification number, select "Software".*
4. *To call up the counter readings for the implement, select "Counter readings".*
5. *To call up the diagnosis for the implement, select "Diagnosis".*



CMS-I-00006195

Repairing the implement

15

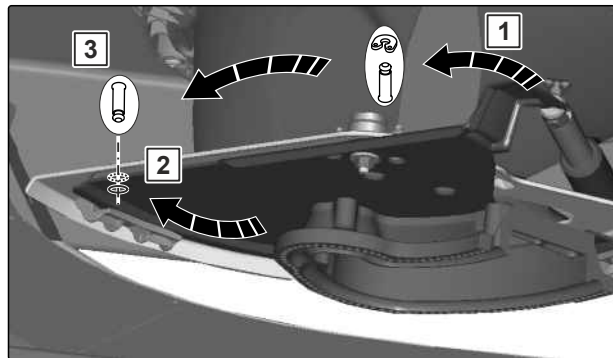
CMS-T-00008266-B.1

15.1 Calibrating the shutters


CMS-T-00008967-B.1

After a software update, the calibration position on the left and right can be entered.

1. Write down the values before performing the update.
2. Unhook the pin from the motor **1** on the left and right shutter.
3. Move the shutter into calibration position **2**, so that the holes are aligned.
4. Secure the calibration position with the pin from the motor **3**.

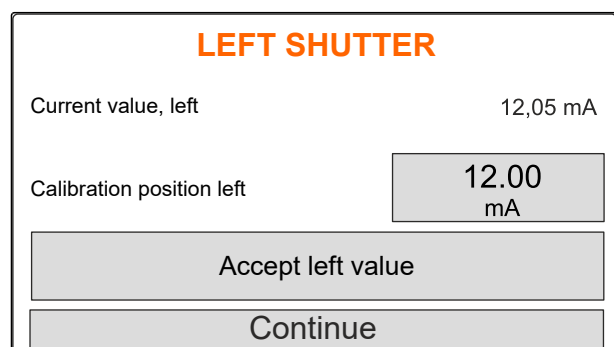


CMS-I-00006201

5.  Call up "Implement" menu.
6. Select "Setup".
7. Select "Calibrate shutters".
8. Select "Accept left value".
9. Select "Continue".
10. Select "Accept right value".
11. Select "Continue".



CMS-I-00006197



CMS-I-00006198

- Save the new calibration position.

TEACH-IN PULSES		
	Left	Right
Current values	12.05 mA	18.34 mA
Calibration positions	12.05 mA	11.89 mA

Save calibration positions?

Save


CMS-I-00006196

15.2 Taring the scale

CMS-T-00008968-B.1

When the hopper is empty, the scale must display a fill level of 0 kg. Otherwise, the scale must be tared.

- Empty the implement completely.
- Drive the tractor with the implement onto a level surface with solid ground and wait until the scale comes to a rest.



-  Call up the "Scale" menu.

- Select "Settings".

- Select "Tare the scale".

- Select "Continue".

- Save the new scale parameters.

SCALE	
Weighing procedure work	Automatic (online)
Tare the scale	
Adjust the scale	


CMS-I-00006203



15.3 Adjusting the scale

CMS-T-00008969-B.1

The filled fertiliser quantity and the displayed fill level must match.

If this is not the case, the scale must be adjusted.

-  Call up the "Scale" menu.
- Select "Adjust the scale".
- Fill a precisely weighed minimum quantity of 500 kg into the hopper.

SCALE	
Weighing procedure work	Automatic (online)
Tare the scale	
Adjust the scale	


CMS-I-00006203

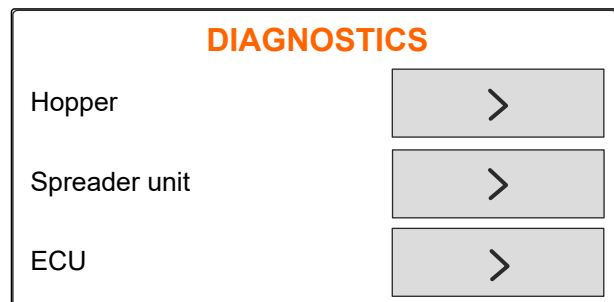
4. Drive the tractor with the implement onto a level surface with solid ground and wait until the scale comes to a rest.
5. Enter the weight of the filled fertiliser quantity.
6. Select *"Continue"*.
7. Save the new scale parameters.

15.4 Display diagnosis data

CMS-T-00008970-A.1

Only for customer service

1.  Call up *"Implement"* menu.
2. select *"Diagnosis"*.
3. Display diagnosis data for *"Hopper"*, *"Spreader unit"* and *"ECU"*.



CMS-I-00006202

Troubleshooting

16

CMS-T-00008989-B.1

Error code	Errors	Cause	Solution
F45001	Left limiter sensor failed	The signal from the path measurement system of the linear drive for the left limiter is less than 0.5 V.	<ul style="list-style-type: none"> ▶ Eliminate damage or interruptions on the cable to the linear drive. ▶ Replace defective linear drive (EA460).
F45002	Right limiter sensor failed	The signal from the path measurement system of the linear drive for the right limiter is less than 0.5 V.	<ul style="list-style-type: none"> ▶ Eliminate damage or interruptions on the cable to the linear drive. ▶ Replace defective linear drive (EA460).
F45003	Setpoint value cannot be maintained	The desired spread rate cannot be spread with the working width and speed.	see page 46
F45004	Left limiter is not responding	Although the linear drive on the left limiter is switched on, the voltage value of the path measurement system in this drive does not change.	see page 46
F45005	Right limiter is not responding	Although the linear drive on the right limiter is switched on, the voltage value of the path measurement system in this drive does not change.	see page 46
F45008	Left shutter not completely closed	The left shutter was not completely closed.	▶ Close the left shutter.
F45009	Right shutter not completely closed	The right shutter was not completely closed.	▶ Close the right shutter.
F45010	Left shutter is not responding	The measured value of the sensor on the left shutter does not change, although the setting motor of the shutter has been switched on.	see page 47

Error code	Errors	Cause	Solution
F45012	Right shutter is not responding	The measured value of the sensor on the right shutter does not change although the setting motor of the shutter has been switched on.	see page 47
F45015	Left shutter angle sensor failed	The signal from the angle sensor of the left shutter is less than 4 mA.	<ul style="list-style-type: none"> ▶ Eliminate damage or interruptions on the cable to the angular motor. ▶ Replace the defective angle sensor (NH195).
F45016	Right shutter angle sensor failed	The signal from the angle sensor of the right shutter is less than 4 mA.	<ul style="list-style-type: none"> ▶ Eliminate damage or interruptions on the cable to the angular motor. ▶ Replace the defective angle sensor (NH195).
F45019	Electric lifting cylinder of left shutter failed	The power consumption of the setting motor on the left shutter is above 6 A.	<ul style="list-style-type: none"> ▶ Remove blockage in the shutter. ▶ Replace the defective angle sensor (NH195).
F45020	Electric lifting cylinder of right shutter failed	The power consumption of the setting motor on the right shutter is above 6 A.	<ul style="list-style-type: none"> ▶ Remove blockage in the shutter. ▶ Replace the defective angle sensor (NH195).
F45022	Spreading disc speed cannot be maintained	The spreading disc speed deviates from the set nominal speed by more than 50 rpm.	▶ Adjust the speed on the PTO shaft until the correct spreading disc speed is achieved.
F45026	Tilt sensor failed	The tilt sensor delivers less than 4 mA on one of its two signals.	<ul style="list-style-type: none"> ▶ Eliminate damage or interruptions on the cable to the tilt sensor. ▶ Replace defective tilt sensor (NH186).
F45027	Overcurrent at output: EEL 092/EEL 093 spread fan illumination	The power consumption of the spread fan illumination is too high	see page 47
F45028	Left weigh cell failed	The signal of the left weigh cell is less than 4 mA.	<ul style="list-style-type: none"> ▶ Eliminate damage or breaks on the cable to the weigh cell. ▶ Replace defective weigh cell.
F45029	Right weigh cell failed	The signal of the left weigh cell is less than 4 mA.	<ul style="list-style-type: none"> ▶ Eliminate damage or breaks on the cable to the weigh cell. ▶ Replace defective weigh cell.

Error code	Errors	Cause	Solution
F45032	Overcurrent at output: EEL 090 hopper lighting	The power consumption of the hopper lighting is too high	see page 47
F45049	Fill level alarm limit undercut	The residual quantity in the hopper set by the user has been reached.	► Refill the hopper
F45058	The selected source for the forward speed is not available	The AmaSpread 2 terminal is not receiving a speed signal.	► Select an existing source. ► Activate the speed signal in the terminal settings.
F45062	Fill level alarm limit undercut	The residual quantity in the hopper set by the user has been reached.	► Refill the hopper.
F45063	Setpoint value cannot be maintained	The desired spread rate cannot be spread with the working width and speed.	see page 48
F45064	Left fill level too low	The left low level sensor is no longer attenuated.	► Refill fertiliser. ► Deactivate the low level alarm in the User settings.
F45065	Right fill level too low	Right fill level too low	► Refill fertiliser. ► Deactivate the low level alarm in the User settings.
F45066	Weighing active, hopper soon empty. Stop and interrupt calibration run	During a calibration run, the hopper content drops below 300 kg.	► Come to a stop and interrupt the calibration run.
F45067	Calibration run can only be started and stopped at a standstill	The button for starting or stopping the calibration run was pressed while driving.	► Come to a stop and start or interrupt the calibration run.
F45068	Hopper fill level too low for calibration run	The hopper fill level is too low for a calibration run.	► Refill fertiliser
F45069	Recurring error when determining the calibration factor	During the automatic calibration, the newly calculated calibration factor was below 0.5 twice.	see page 48

16.1 F45003: Setpoint value cannot be maintained

CMS-T-00008994-A.1

The desired spread rate cannot be spread with the working width and speed.

1. Reduce speed.
2. Reduce spread rate.
3. Reduce the working width

16.2 F45004: Left limiter is not responding

CMS-T-00008999-A.1

Although the linear drive on the left limiter is switched on, the voltage value of the path measurement system in this drive does not change.

1. Remove blockage in the limiter.
2. Eliminate damage or interruptions on the cable to the linear drive.
3. Replace defective linear drive (EA460).

16.3 F45005: Right limiter is not responding

CMS-T-00008998-A.1

Although the linear drive on the right limiter is switched on, the voltage value of the path measurement system in this drive does not change.

1. Remove blockage in the limiter.
2. Eliminate damage or interruptions on the cable to the linear drive.
3. Replace defective linear drive (EA460).

16.4 F45010: Left shutter is not responding

CMS-T-00008996-A.1

The measured value of the sensor on the left shutter does not change, although the setting motor of the shutter has been switched on.

1. Eliminate any damage or interruptions on the cable connection to the setting motor.
2. Hook the shutter back into the setting motor after the calibration.
3. Replace the defective setting motor (EA461).

16.5 F45012: Right shutter is not responding

CMS-T-00008995-A.1

The measured value of the sensor on the right shutter does not change although the setting motor of the shutter has been switched on.

1. Eliminate any damage or interruptions on the cable connection to the setting motor.
2. Hook the shutter back into the setting motor after the calibration.
3. Replace the defective setting motor (EA461).

16.6 F45027: Overcurrent at output: EEL 092/EEL 093 spread fan illumination

CMS-T-00009016-A.1

The power consumption of the spread fan illumination is too high

1. Check light and wiring harness
2. Replace defective light (NA297)
3. Replace defective wiring harness

16.7 F45032: Overcurrent at output: EEL 090 hopper lighting

CMS-T-00009015-A.1

The power consumption of the hopper lighting is too high

1. Check light and wiring harness
2. Replace defective light
3. Replace defective wiring harness

16.8 F45063: Setpoint value cannot be maintained

CMS-T-00009027-A.1

The desired spread rate cannot be spread with the working width and speed.

1. Reduce speed.
2. Reduce spread rate.
3. Reduce the working width.

16.9 F45069: Recurring error when determining the calibration factor

CMS-T-00009002-A.1

During the automatic calibration, the newly calculated calibration factor was below 0.5 twice.

1. Remove the blockage on the shutter.
2. Calibrate fertiliser manually.
3. Recalibrate the scale.
4. Set "Rice" special spreading material.

Appendix

17

CMS-T-00008986-A.1

17.1 Other applicable documents

CMS-T-00008987-A.1

- Tractor operating manual
- Operating manual for the mounted spreader

Directories

18

18.1 Glossary

CMS-T-00008275-A.1

M

Machine

Mounted implements are accessory parts of the tractor. However, mounted implements are always referred to as the implement in this operating manual.

O

Operating materials

Operating materials serve to ensure operational readiness. Operating materials include e.g. cleaning agents and lubricants such as lubricating oil, greases or cleaners.

T

Tractor

In this operating manual, the designation tractor is always used, even for other agricultural tractor units. Implements are mounted on the tractor or towed by the tractor.

18.2 Index

A		I	
Address		Intended use	8
<i>Technical editing</i>	4		
B		K	
Basic information	39	Keys	
Boundary spread deflector		<i>Input</i>	13
<i>Adjusting the tilt</i>	35	<i>Navigation</i>	13, 17
Boundary spreading method		<i>Overview</i>	13
<i>Select</i>	35		
C		L	
Calibration factor		Low level	
<i>determining at a standstill</i>	29	<i>Configuring notifications</i>	23
<i>determining while driving</i>	32		
<i>Select method</i>	24	M	
Contact data		Menu selection	
<i>Technical editing</i>	4	<i>Documentation</i>	10
Control computer		<i>Hopper</i>	10
<i>configuration</i>	19	<i>Implement</i>	10
<i>connecting</i>	16	<i>Products</i>	10
<i>Overview</i>	10	<i>Scale</i>	10
Counter reading	39	<i>Work</i>	10
D		N	
Diagnosis	39	Navigation keys	
Diagnosis data		<i>using</i>	17
<i>calling up</i>	42	Numerical values	
F		<i>entering</i>	18
Fill level			
<i>Entering the alarm limit</i>	23	O	
Function		Operation	
<i>Description</i>	9	<i>Entering numbers</i>	18
H		<i>Navigating in the menu</i>	17
Hopper		<i>switching on and off</i>	17
<i>filling</i>	28	P	
<i>horizontal alignment</i>	24	Product	
		<i>creating</i>	25
		<i>deleting</i>	26
		<i>Entering data</i>	26
		<i>selecting</i>	26
		Pulses	
		<i>per 100 m, determining</i>	21

R

Rate increment <i>entering</i>	23
-----------------------------------	----

S

Scale	
<i>adjusting</i>	41
<i>taring</i>	41
Shutter	
<i>calibration</i>	40
Software	
<i>Calling up the identification number</i>	39
Source of the speed signal	
<i>Determining the pulses per 100 m</i>	21
<i>Signal socket</i>	20
Speed	
<i>entering</i>	22
Spreader	
<i>emptying</i>	37
Spreading	
<i>one-sided</i>	33
<i>Selecting the boundary spreading method</i>	35
Spread rate	
<i>adjusting</i>	33
Switching off	17
Switching on	17

T

Terminal	
<i>configuration</i>	19
Tilt	
<i>Adjusting the boundary spread deflector</i>	35

W

Work data	
<i>documenting</i>	38
Work display	
<i>Description</i>	14
Work lights	
<i>using</i>	36



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