Original operating manual

Control computer

AmaScan 2

This operating manual is valid as of software version NW305

SmartLearning

www.amazone.de

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1.1 Copyright

CMS-T-00012308-A.1

1.2 Diagrams

CMS-T-005676-D.1

1.2.1 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.

1.2.2 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.

1.2.3 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

1.2.3.1 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

1.2.3.2 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

1.2.4 Lists

CMS-T-000024-A.1

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

Example:

- Point 1
- Point 2

1.2.5 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.

1.2.6 Direction information

CMS-T-00012309-A.1

Unless otherwise specified, all directions are always seen in the direction of travel.

1.3 Other applicable documents

CMS-T-00000616-B.1

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

1.4 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

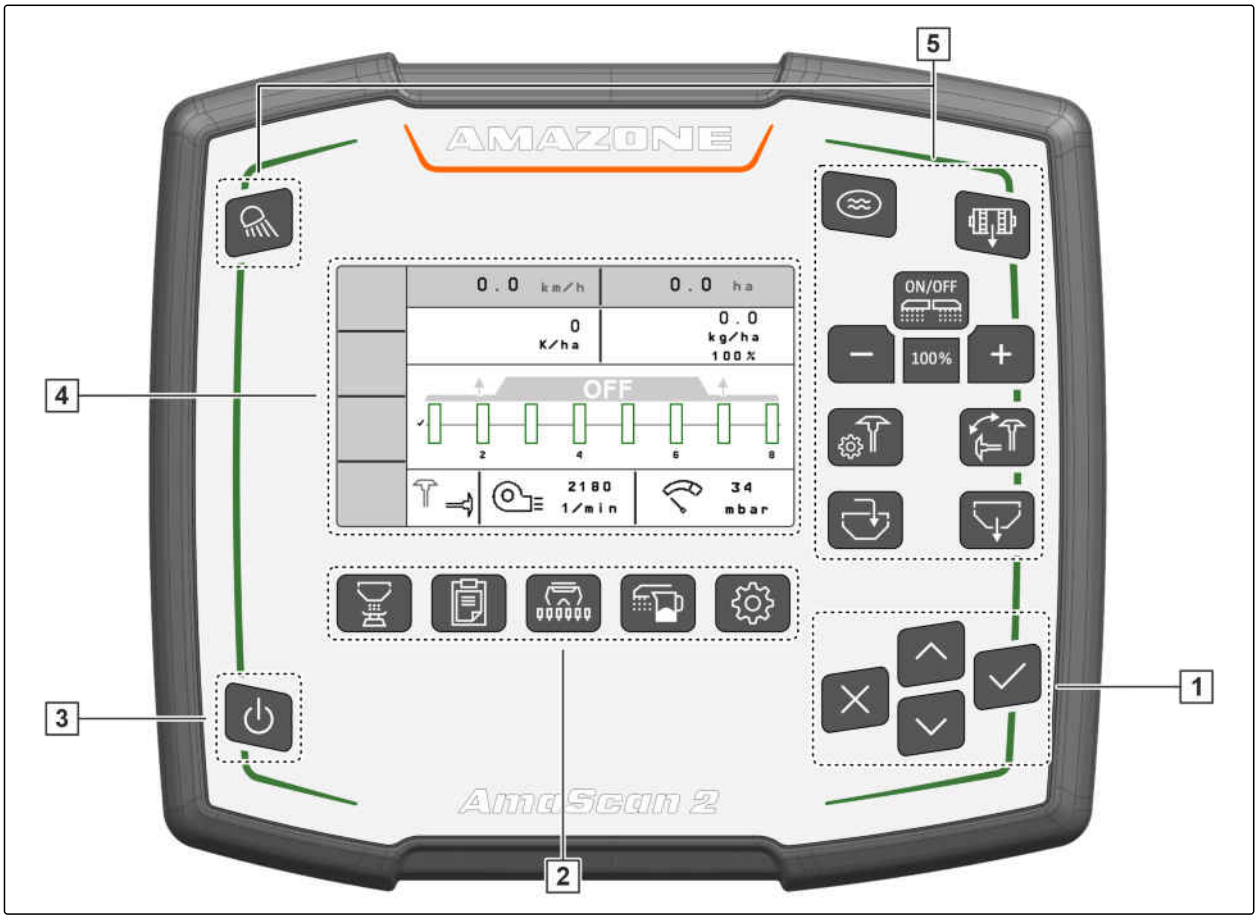
- The control computer is used to control agricultural implements.
- The operating manual is part of the control computer. The control computer is solely intended for use in compliance with this operating manual. Uses of the control computer that are not described in this operating manual can lead to 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-00007147-B.1

4.1 Overview of the control computer

CMS-T-00007149-A.1



CMS-I-00004959

1	Navigation keys	2	Menu buttons
3	Switching on and off	4	Display
5	Function keys		

4.2 Function of the control computer

CMS-T-00007464-A.1

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

- Starting and stopping the metering unit
- Pre-metering fertiliser or micropellets
- Adjusting the implement
- Managing products
- Calibrating the spread rate for fertiliser or micropellets
- Entering refilled quantity of fertiliser or micropellets
- Using the work lights
- Activating the water hole function
- Emptying the fertiliser hopper
- Calling up the documentation

4.3 Function keys

CMS-T-00007150-A.1

Button	Function
	Switching the work lights on or off
	Switching water hole mode on or off
	Pre-metering
 ON/OFF	Switching the implement on or off
	Reducing the target rate
	Increase the target rate
100%	Target rate at 100%
	Configuring the track marker
	Changing the track marker
	Filling the metered material hopper
	Emptying the metered material hopper

4.4 Menu buttons

CMS-T-00007164-A.1

Button	Menu
	Calibrate the spread rate
	Documenting work
	Display the Work menu
	Configure the seed type
	Settings

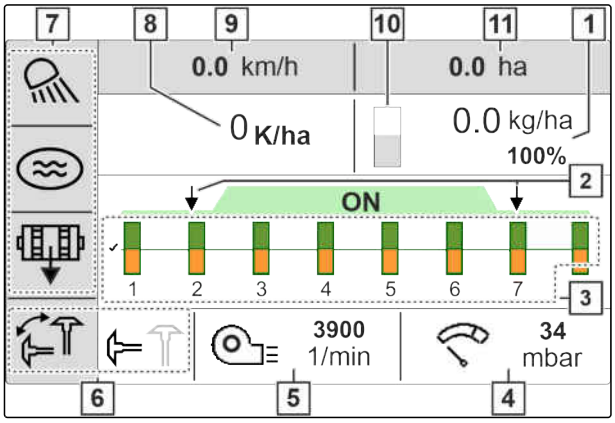
4.5 Navigation keys

CMS-T-00007473-A.1

Button	Menu
	Move selection up
	Move selection down
	Confirm selection
	Cancel selection

4.6 Work display

CMS-T-00007151-A.1



CMS-I-00005057

1 Spread rate for fertiliser or micropellets

2 Status of the working position

3 Display for the singling unit accuracy

4 Fan pressure

5 Fan speed

6 Track marker status

7 Implement function

8 Seed spread rate

9 Forward speed

10 Fill level

11 Area counter

4.7 Rating plate

CMS-T-00010641-A.1

1 Part number

2 Encrypted calendar date

3 Revision number

4 Serial number

CMS-I-00007283

1 Device number

2 Encrypted calendar date

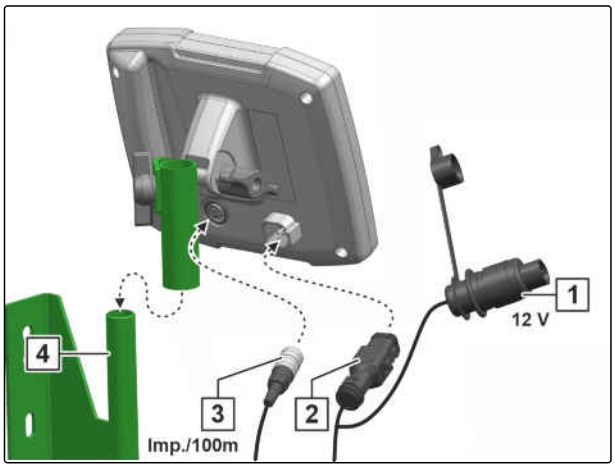
3 Type

CMS-I-00007286

Connecting the control computer 5

CMS-T-00007152-A.1

1. Connect the power supply [1].
2. Connect the implement plug [2].
3. *Depending on the implement equipment,* Connect the signal cable [3] for recording the speed.
4. Use the holder [4] for installing the control computer in the tractor cab.



CMS-I-00005077

Basic operation 6

CMS-T-00007098-A.1

6.1 Switching the control computer on and off

CMS-T-00007100-A.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 for road travel,*

press and hold the on/off button .

6.2 Navigating in the menu

CMS-T-00007146-A.1

1. *To make a selection,*

   press the desired or button.

2. *To confirm the selection,*

   press the button.

3. *To cancel the selection,*

   press the button.

4. *To go back one page in the menu,*

   mark the field on the display and press the button.

5. *To exit the menu,*

   mark the  field on the display and press the  button.

6. *To change the menu page,*

   mark the  field on the display and press the  button.

6.3 Entering numerical values

CMS-T-00007099-A.1

Enter numerical values in digits from left to right.
Enter a comma if required.

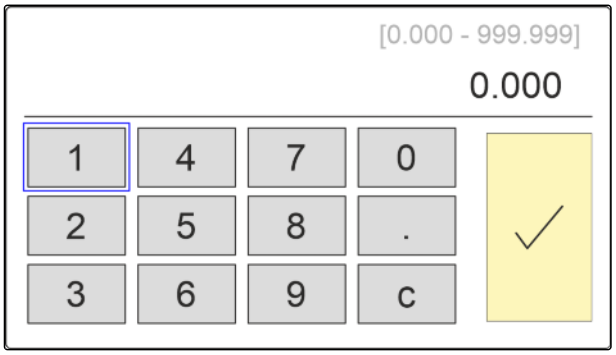
1. Select the desired numerical value with  or  .
2. Press  .
3. Repeat the procedure for each numerical value.
4. *To confirm the entry,*

   press  , to

   or

   cancel the entry,

   Press  .



CMS-I-00005044

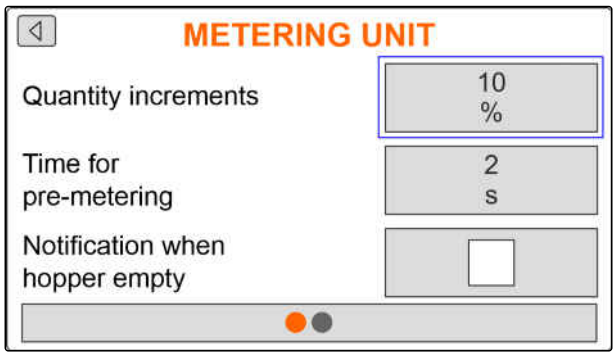
Adjusting the implement 7

CMS-T-00007112-A.1

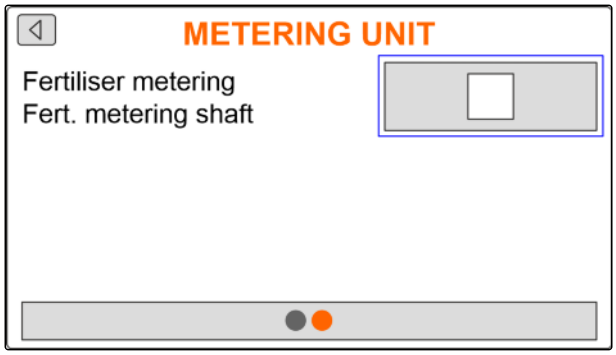
7.1 Adjusting the metering unit

CMS-T-00007113-A.1

1. Press ⚙.
2. Select the metering unit.
3. Press ✓.
4. *To define the percentage by which the spread rate should be changed using the keys in the Work menu,*
   enter the desired percent value under *"Quantity increments"*.
5. Enter the duration of the pre-metering for fertiliser or micropellets.
6. *If you want to monitor how much fertiliser is left,*
   Activate *"Notification when hopper empty"*.
7. Switch to the next page.
8. *When monitoring of the metering shaft should be activated,*
   Select *"Monitoring of the metering shaft"*.



CMS-I-00005041



CMS-I-00005081

7.2 Setting up the fan speed monitoring

CMS-T-00007117-A.1

The singling unit fan produces the overpressure in the grain singling. The singling unit fan is driven by the PTO shaft or hydraulically. The following fan

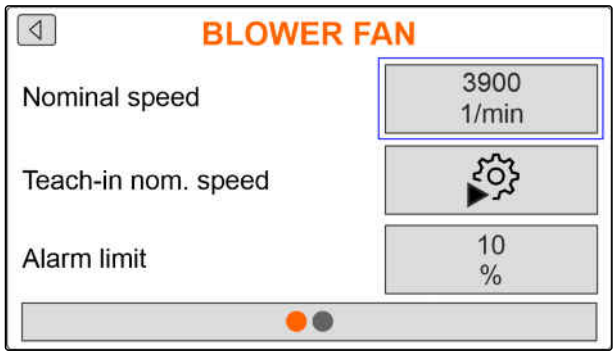
parameters can be set to monitor adherence during operation:

- Nominal speed
- Fan pressure
- For implements with front hopper, the fan speed can also be monitored on the hydraulically driven conveyor fan.

1. Press .
2. Select the fan.
3. Press .
4. Enter the desired nominal speed for the fan under *"Nominal speed"*

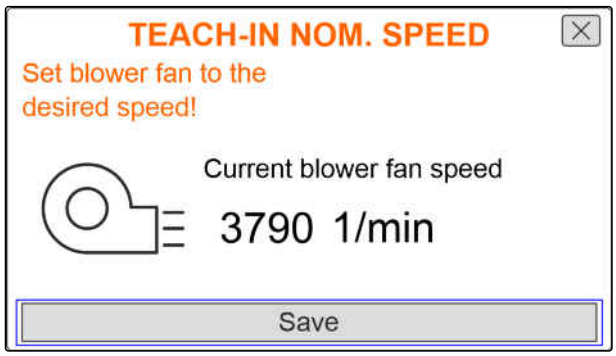
   or

   Press under *"Teach-in nominal speed"*.



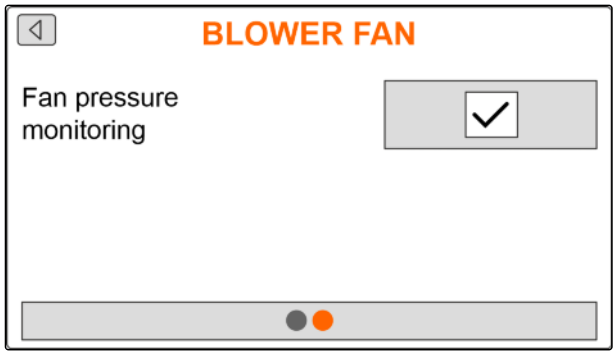
CMS-I-00005037

5. Run the fan up to the desired speed.
6. Press *"Save"*.
7. *To define the deviation from the nominal speed at which an alarm should be issued,*
   enter the deviation in percent under *"Alarm limit"*.



CMS-I-00005100

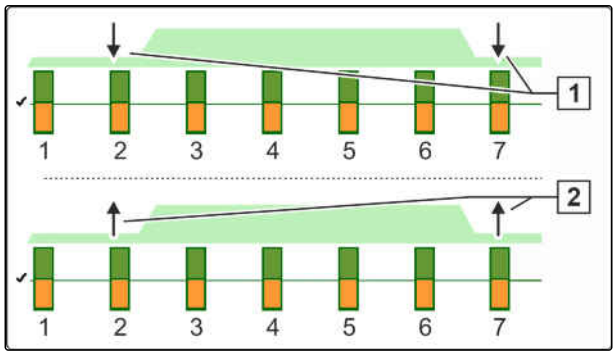
8. Switch to the next page.
9. *If the pressure in the singling unit fan should be monitored,*
   activate *"Fan pressure monitoring"*.



CMS-I-00005038

7.3 Configuring analogue working position sensors

CMS-T-00007118-A.1



CMS-I-00005233

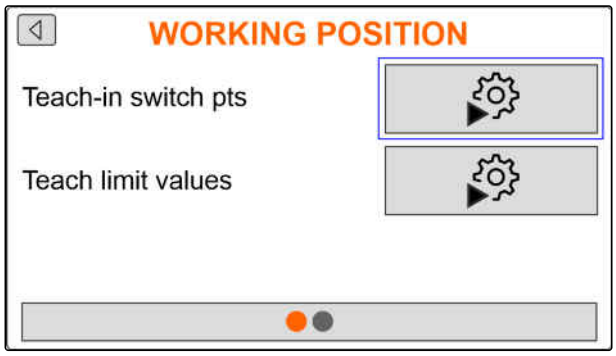
The analogue working position sensor determines whether the implement is in working position **1**. If the implement is switched on and in working position, the electric metering drives start as soon as a speed signal is detected. In headland position **2**, the electric metering drives are automatically stopped. To determine when the implement is in working position, the positions are specified as a percent value of the total position path. The positions can be taught in.

To determine the total position path of the analogue working position sensor, the limit values need to be taught in.

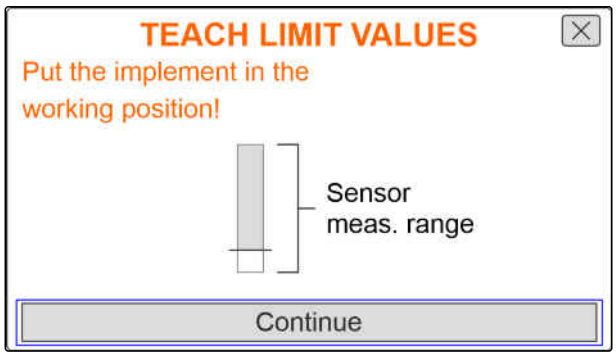
NOTE

Monitoring of the opto-sensors only works in working position. Seed is spread as soon as the fan is running and the ground wheel is moving.

1. Press ⚙.
2. Select the working position sensor.
3. Press ✓.
4. *To teach in the limit values,*
   press ⚙▶ under *"Teach-in limit values"*.
5. Move the implement into working position.
6. Press *"Continue"*.



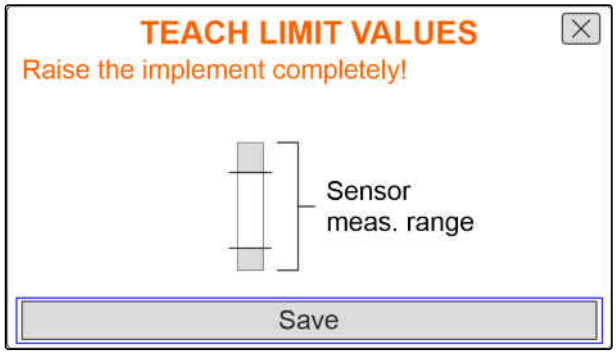
CMS-I-00005040



CMS-I-00005098

7. lift the implement completely.

8. Press *"Save"*.



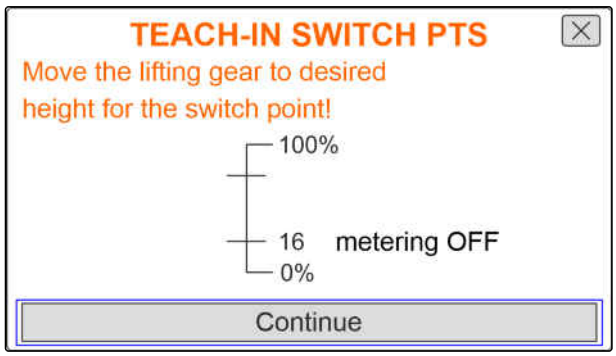
CMS-I-00005099

9. *If the percent values for the switch points are not known,*
   press ▶ under *"Teach-in switch points"*.

NOTE

The correct setting of the switch points is important for precise switching of the metering drives on the field. Depending on the implement equipment, the metering drives for fertiliser or micropellets are electric.

The Metering unit ON and Metering unit OFF values should be as far apart as possible.



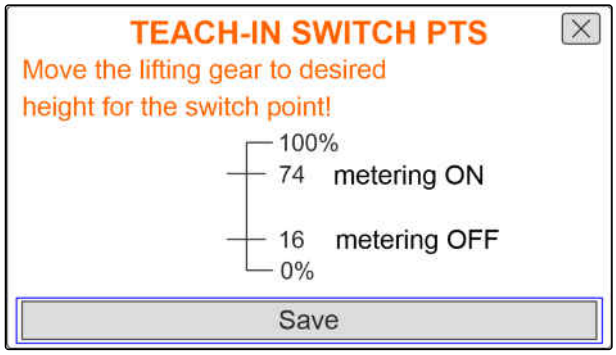
CMS-I-00005093

10. Move the lifting gear to height for the *"Metering unit OFF"* switch point.

11. Press *"Continue"*.

12. Move the lifting gear to height for the *"Metering unit ON"* switch point.

13. Press *"Save"*.

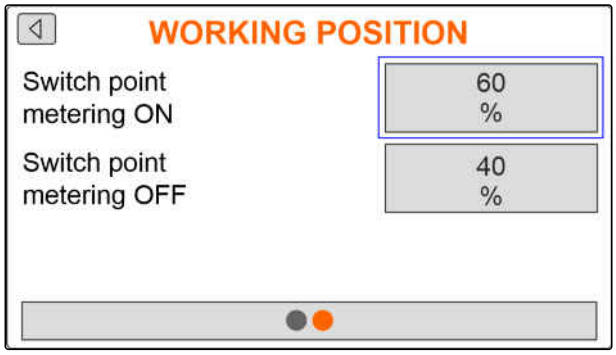


CMS-I-00005092

If the percent values for the switch points are known, they can be directly entered.

14. Switch to the next page.

15. Enter the percent value for the working position under *"Switch point metering ON"* and *"Switch point metering OFF"*.



CMS-I-00005039

7.4 Configuring the grain recording

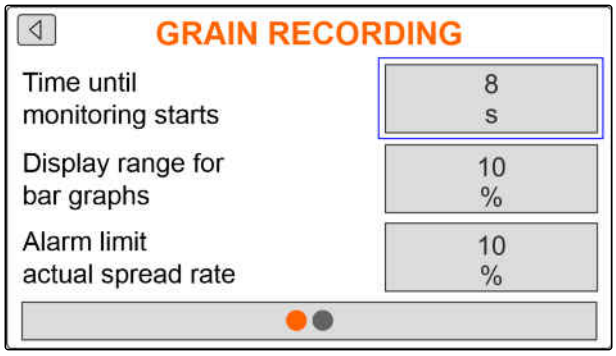
CMS-T-00007116-A.1

1. Press .

2. Select grain recording.

3. Press .

4. *To avoid getting notification messages right after starting to spread,*
   set a monitoring delay under *"Time until monitoring starts"*.



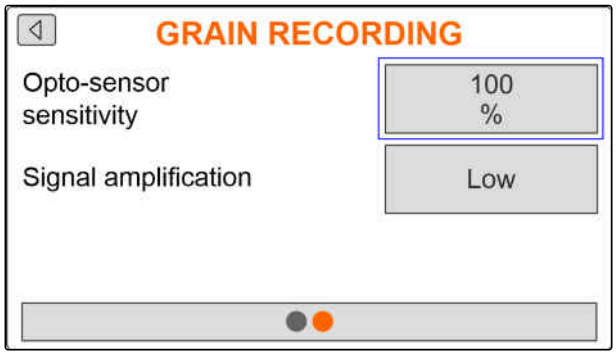
CMS-I-00005022

The grain monitoring is shown in the Work menu with bar graphs. The bar graphs show the deviation from the target spread rate. The display range of the bar graphs corresponds to a defined percent value of the target spread rate.

5. Enter the percent value under *"Display range for bar graphs"*.

6. *To define the deviation from the target spread rate at which an alarm should be issued,*
   enter the deviation from the target spread rate in percent under *"Actual spread rate alarm limit"*.

7. Switch to the next page.



CMS-I-00005024

With the sensitivity of the opto-sensor, the size of the seed to be detected is defined, and it ensures that small seeds are also detected. The following values are recommended for the sensitivity of the opto-sensors:

Seed	Sensitivity
Rapeseed	100 %
Sorghum	≤ 90 %
Soybean	≤ 90 %
Field bean	≤ 90 %
Maize	≤ 90 %
Sugar beet	≤ 90 %
Sunflower	≤ 90 %

NOTE

When the selected sensitivity of the opto-sensor is too high, it can detect dust, sand grains or contamination as seed.

8. Set the sensitivity of the opto-sensors.

With increasing soiling of the opto-sensors, the signal can be gradually increased.

- Off
- Low
- Medium
- High
- Maximum

The following values are recommended for the signal amplification of the opto-sensors:

Seed	Signal amplification
Rapeseed	Low
Sorghum	Low
Soybean	Low
Field bean	Low
Maize	Low
Sugar beet	Low
Sunflower	Low

NOTE

When the signal amplification selected for the opto-sensor is too high, it can detect dust, sand grains or contamination as seed.

9. Set the signal amplification for the opto-sensors.

7.5 Configuring the source for the speed signal

CMS-T-00007138-A.1

7.5.1 Configuring the simulated speed

CMS-T-00007154-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.

1. press  .
2. Select Speed.
3. press  .
4. Under *"Source"*, select *"Simulated"*.
5. Under *"Simulated speed"*, enter the desired speed.

7.5.2 Setting up the speed sensor on the implement

CMS-T-00007140-A.1

To control electric metering drives, a speed signal is required. The speed sensor on the implement can be used for this.

1. press ⚙.
2. Select Speed.
3. press ✓.
4. Under *"Source"* *"Implement (ground wheel)"*,

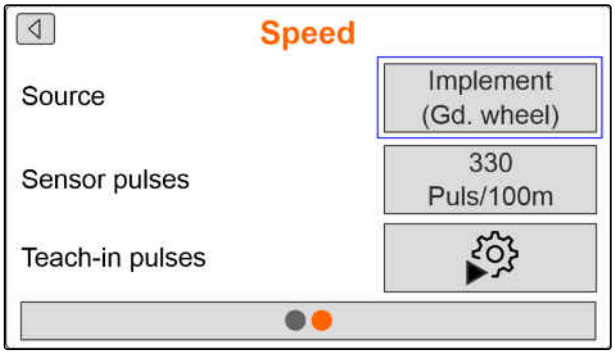
   or

   select *"Implement (radar)"*.
5. Under *"Sensor pulses"*, enter the pulses per 100 metres

   or

   To teach in the pulses

   Tap ⚙▶ and observe the section *"Determining the pulses per 100 m"*.



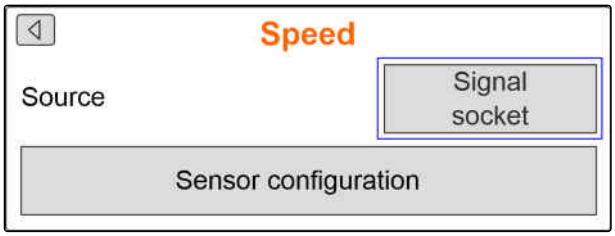
CMS-I-00005059

7.5.3 Configuring the speed signal from the tractor

CMS-T-00007153-A.1

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

1. press ⚙.
2. Select Speed.
3. press ✓.
4. Select *"Signal socket"* under *"Source"*.
5. Select *"Sensor configuration"*.



CMS-I-00005082

6. Under *"Wheel pulses"*, enter the pulses per 100 metres

   or

   To teach in the pulses

   Select ▶⚙ and observe the section *"Determining the pulses per 100 m"*.

7. Check the accuracy of the utilised source for the speed signal.

➡ Inaccurate sources for the speed signal cause faulty metering of fertiliser or micropellets.

NOTE

AMAZONE recommends using the speed signal from the implement.

7.5.4 Determining the pulses per 100 m

CMS-T-00007214-A.1

The control computer requires the pulses per 100 m to determine the following values:

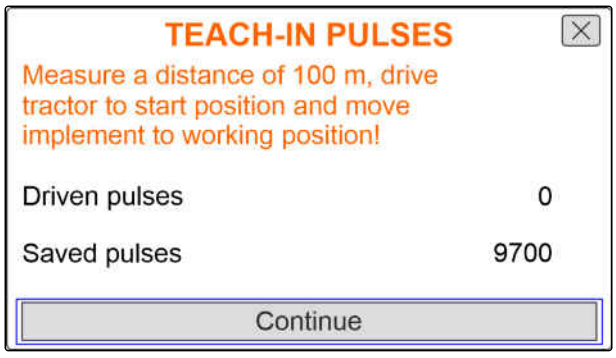
- Actual forward speed
- Calculation of the speed-dependant metering of fertiliser or micropellets.

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 also 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"*.



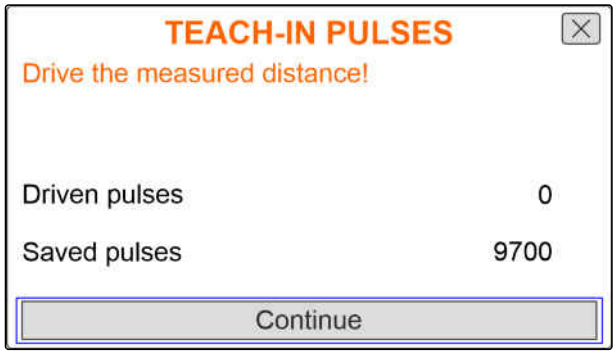
CMS-I-00005018

5. Move the implement into working position.

6. Drive to the end point.

➡ The *"Driven pulses"* will be counted.

7. Select *"Continue"*.

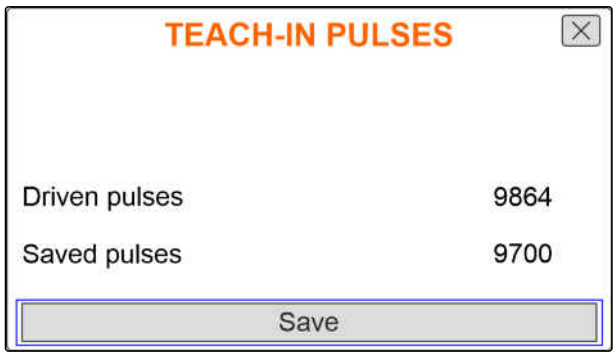


CMS-I-00005019

8. *To accept the value,*
select *"Save"*

or

To discard the value,
select ✕.



CMS-I-00005020

7.6 Configuring the start-up ramp

CMS-T-00007188-A.1

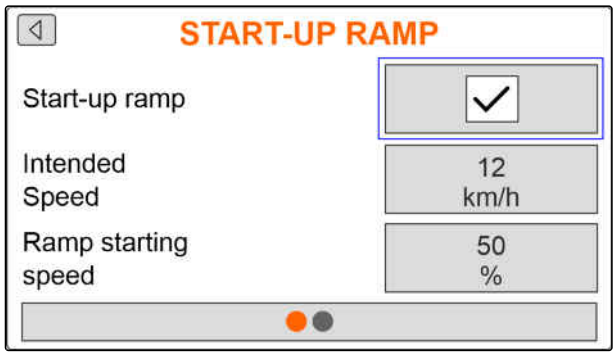
The spread rate for the fertiliser depends on the working speed. When the implements starts moving, less fertiliser is spread. The start-up ramp prevents under-fertilising. As long as the regular working speed has not been reached, spreading will be regulated based on the pre-selected speed.

1. *To activate the start-up ramp,*
Press ✓.

2. Enter the *"Intended speed"*.

The ramp start speed is a percent value of the pre-selected speed at which spreading starts.

3. Enter the *"Ramp start speed"*.

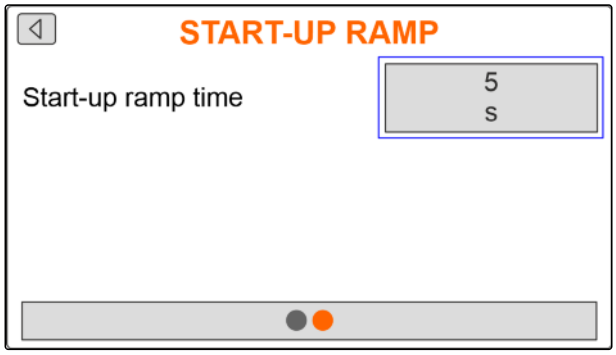


CMS-I-00005016

4. Switch to the next page.

Time passes until the working speed increases from the ramp start speed to the regular working speed. This time is the duration of the start-up ramp.

5. Enter the *"Start-up ramp time"*.



CMS-I-00005017

7.7 Configuring the terminal

CMS-T-00007142-A.1

The following parameters can be set in the terminal configuration:

- Setting the region and language
- Display illumination in %
- Speed
- Delete saved pool

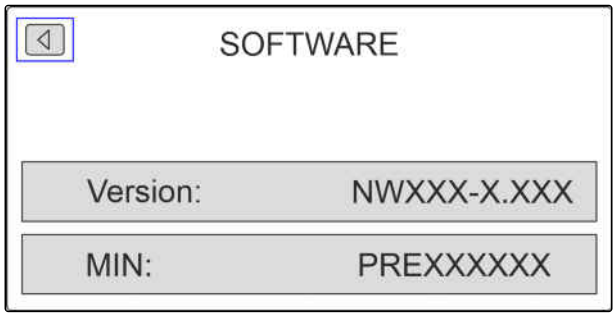
1. press .
2. Select Terminal.
3. press .

7.8 Display software version

CMS-T-00008309-A.1

The following information can be called up:

- Software version
- Implement number



CMS-I-00005673

1. press .
2. Select Info.
3. press .

4. select Software.
5. press ✓.
6. Read the software version

   or

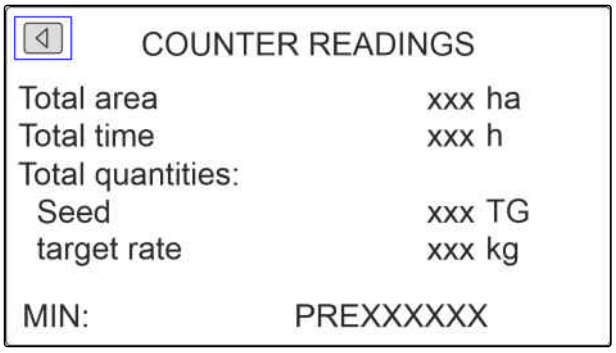
   Read the implement number.

7.9 Showing the counter readings

CMS-T-00008310-A.1

The following information can be called up:

- Total area
- Total time
- Total seed quantity
- Total micropellet quantity



CMS-I-00005672

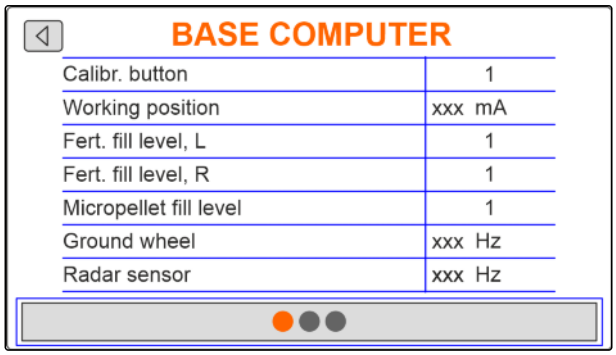
1. press ⚙.
2. Select Info.
3. press ✓.
4. select Counter readings.
5. press ✓.
6. Read the counter readings.

7.10 Displaying the diagnosis data

CMS-T-00008311-A.1

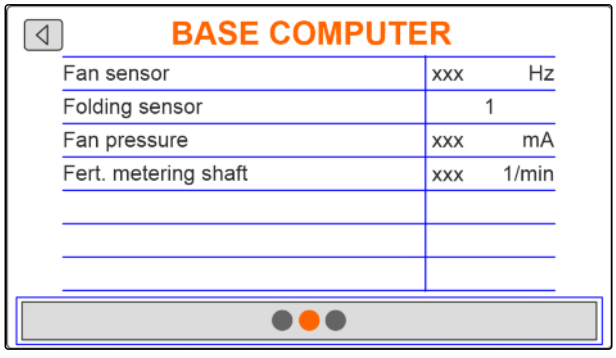
The following information can be called up:

- Switching states
- Speeds
- Power consumptions
- Voltage supply
- Opto-sensor
  - Counter reading
  - Degree of soiling



CMS-I-00005670

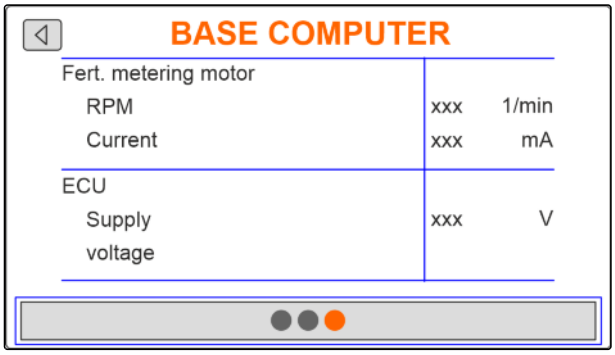
1. press ⚙.
2. Select Info.
3. press ✓.
4. select Diagnosis.
5. press ✓.
6. select Base computer.
7. press ✓.
8. Read the diagnosis data.
9. *If the desired data are not shown,* switch to the next page.
10. Read the diagnosis data.



CMS-I-00005669

11. *If the desired data are not shown,* switch to the next page.

12. Read the diagnosis data.



CMS-I-00005671

13. press ⚙.

14. Select Info.

15. press ✓.

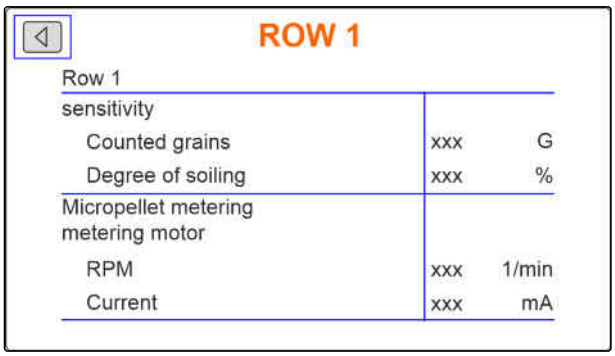
16. select Diagnosis.

17. press ✓.

18. Select the desired row.

19. press ✓.

20. Read the diagnosis data.



CMS-I-00005668

7.11 Geometry

CMS-T-00007187-A.1

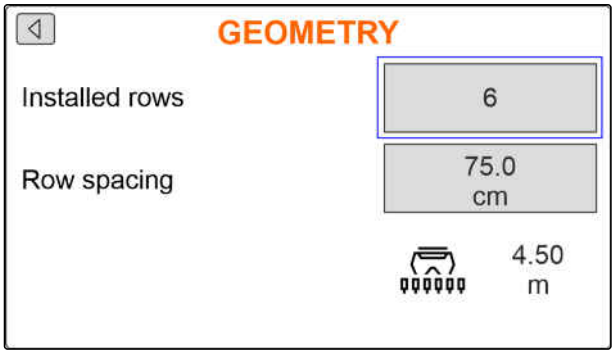
1. press ⚙.

2. Select Geometry.

3. press ✓.

4. Enter the number of installed seeding coulters.

5. Enter the row spacing.



CMS-I-00005014

Entering the target spread rate

8

CMS-T-00007130-A.1

1. press  .

When the target spread rate is entered, the software calculates the placement spacing. When the placement spacing is entered, the software calculates the target spread rate.

2. Enter the desired spread rate in grains per hectare under *"Target spread rate"*

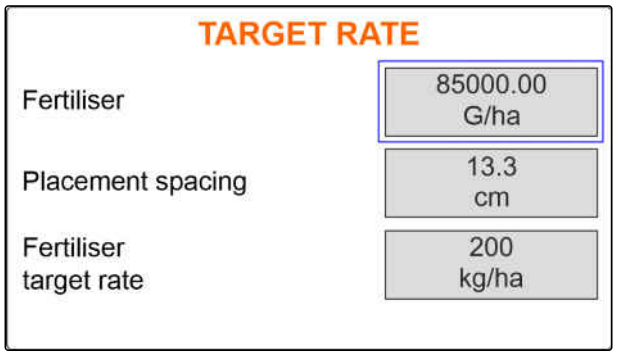
   or

   Enter the desired spacing of the grains under *"Placement spacing"*.

3. Enter the desired spread rate in kilograms per hectare under *"Fertiliser target spread rate"*

   or

   Enter the desired spread rate in kilograms per hectare under *"Micropellet target spread rate"*.



CMS-I-00005042

Calibrating the target spread rate for fertiliser or micropellets

9

CMS-T-00007119-A.1

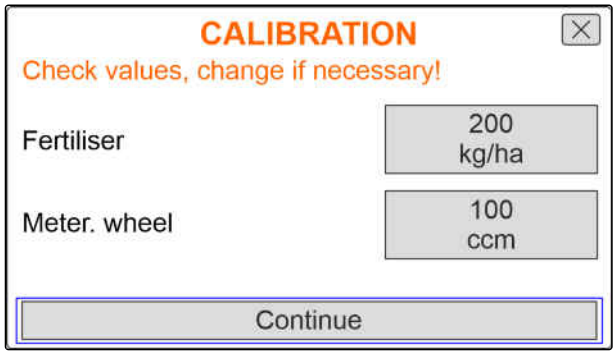
REQUIREMENTS

- ✓ The fan is switched off
- ✓ The implement is at a standstill

1. press .
2. Enter the *"Target spread rate"*.

NOTE

On implements with decentralised metering unit, the metering wheel volume per seeding coulter row is specified.

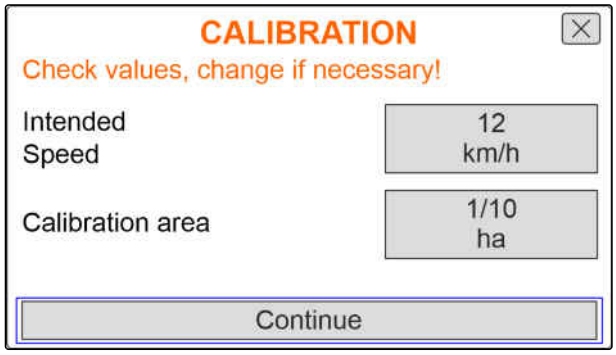


CMS-I-00005033

3. Enter the metering wheel volume under *"Metering wheel"*.
4. Press *"Continue"*.
5. Enter the subsequent working speed under *"Intended speed"*.

The calibration area corresponds to the area on which fertiliser or micropellets are spread during calibration.

6. Enter the desired calibration area.
7. Press *"Continue"*.



CMS-I-00005035

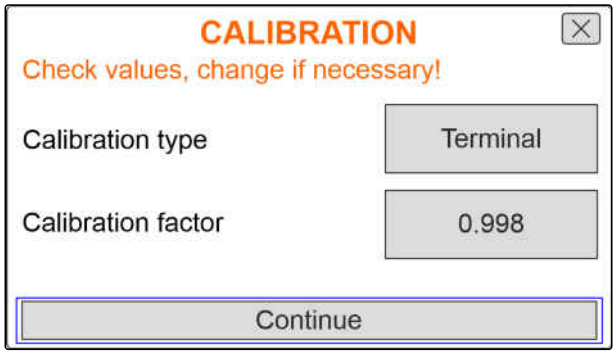
The calibration type defines how the calibration is started.

8. Select *"Terminal"*

   or

   Select *"Calibration button"*.

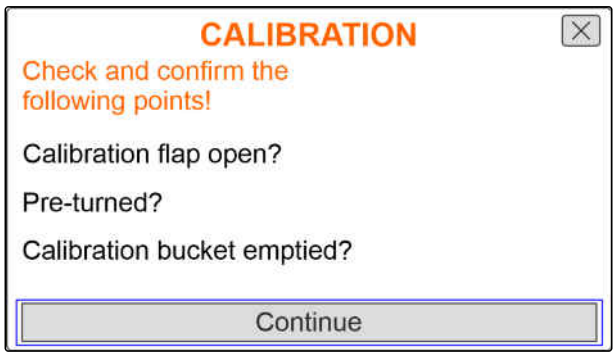
9. Press *"Continue"*.



CMS-I-00005036

10. Prepare the implement for calibration according to the operating manual.

11. *If the points shown on the display are fulfilled,*
    Press *"Continue"*.

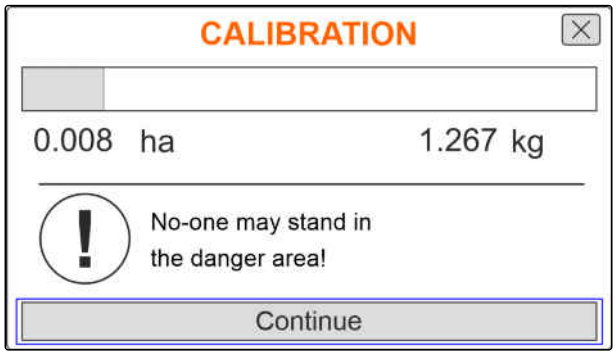


CMS-I-00005032

12. *If the "Terminal" was selected as the calibration method,*
    Press *"Continue"*

    or

    If the "Calibration button" was selected as the calibration method,
    press and hold the calibration button on the implement.



CMS-I-00005028

➡ The bar diagram shows the progress of the calibration.

➡ The calibration stops automatically.

13. Monitor the fill level of the calibration buckets.

14. *If the calibration buckets are full before the calibration area is reached,*
    Press *"Continue"*.

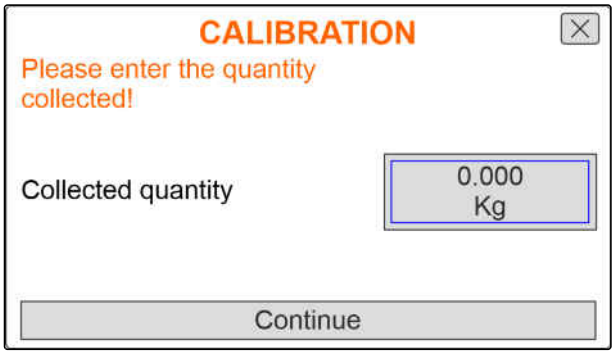
15. Weigh the collected quantity.

16. Take account of the weight of the calibration bucket.

17. Enter the weight of the collected quantity.

18. Press *"Continue"*.

➡ The calibration factor will be calculated.

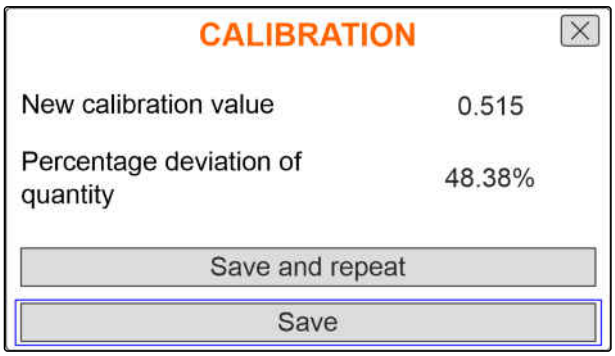


CMS-I-00005029

19. *To repeat the calibration,*
press *"Save and repeat"*

or

to accept the new calibration factor.
Press *"Save"*.



CMS-I-00005031

20. *After the calibration*
Put the calibration bucket in parking position and close the calibration flap.

CMS-I-00005030

Working

10

CMS-T-00007120-A.1

10.1 Switching the electric metering drives on or off

CMS-T-00007144-A.1

The seed is spread via the ground wheel drive. To do so, the implement must be moved into working position.

REQUIREMENTS

- ✓ The implement is configured
- ✓ The spread rate is calibrated
- ✓ The products are configured
- ✓ The implement is error free
- ✓ The implement is in working position
- ✓ The fan has reached the nominal speed

1. Press  .
2. *To switch on the implement,*
   press the 

   button.

➡ In the Work menu, the implement status displays *"ON"*.

➡ The opto-sensors are activated.

3. Drive at a constant speed.

➡ The electric metering drives are regulated depending on the speed.

4. *To interrupt the electric metering drives while spreading seed,*
   press the 

   button.

➡ In the Work menu, the implement status displays *"OFF"*.

➡ The electric metering drives will be deactivated.

➡ The opto-sensors are deactivated.

10.2 Pre-metering fertiliser or micropellets

CMS-T-00007114-A.1

Pre-metering enables the spreading of fertiliser or micropellets at the desired target quantity when driving off from a standstill.

REQUIREMENTS

✓ Time for pre-metering defined in the settings

1. Press  .
2. *To pre-meter fertiliser or micropellets,* press the  button.

➡ The fertiliser or micropellets are pre-metered in the defined time.

10.3 Entering refilled quantity of fertiliser or micropellets

CMS-T-00007124-A.1

1. Press  .
2. press the  button.
3. *If the displayed residual quantity does not match the actual residual quantity,* empty the hopper.

CMS-I-00005012

4. Reset the residual quantity to zero with →0

   or

   If a residual quantity is displayed, although the hopper is empty

   reset the residual quantity to zero with →0 .

The refilled quantity can be added to the residual quantity.

5. Enter the refilled quantity.

➡ The new fill level will be shown.

6. *To confirm the new fill level,*
   tap *"Save"*.

10.4 Changing the target spread rate for fertiliser or micropellets

CMS-T-00007123-A.1

The target spread rate can be changed as required during operation. The changed target quantity is shown in percent in the Work menu.

REQUIREMENTS

✓ Target spread rate for the fertiliser or micropellets is defined

✓ Rate increments for the target spread rate for the fertiliser or micropellets are defined

1. Press  .

2. *To increase the target spread rate by the defined rate increment*

   Press the + button

   or

   To reduce the target spread rate by the defined rate increment

   Press the − button

   or

   To adjust the defined target spread rate,

   press the 100 % button.

10.5 Using the work lights

CMS-T-00007136-A.1

1. Press  .
2. *To switch on the work lights,*
   Press  .

➡ A symbol for the work lights is shown in the status bar.

3. *To switch off the work lights for road travel,*
   press  again.

➡ The symbol in the status bar is turned off.

10.6 Activating the water hole function

CMS-T-00007141-A.1

To lift the implement without stopping the electric metering drives, the water hole function can be used.

REQUIREMENTS

✓ The implement is in working position

1. Press  .
2. *To activate the water hole function,*
   press the  button.

➡ The  symbol is shown in the Work menu.

3. Slightly raise the implement.

➡ The electric metering drives are still rotating although the implement position is higher than the working position.

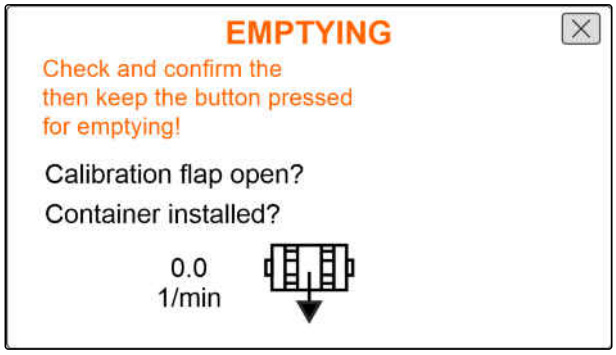
➡ Seed will be spread as long as the ground wheel drive is active.

4. *To terminate the water hole function,*
   Move the implement into working position.

Emptying the fertiliser hopper 11

CMS-T-00007125-A.1

1. press  .
2. Check the points shown on the display.
3. *If the displayed points are fulfilled,*
   press  and hold.
4. *When the calibration buckets are filled,*
   Empty the calibration bucket.
5. *After emptying*
   Put the calibration bucket in parking position and close the calibration flap.



CMS-I-00005010

Documenting work 12

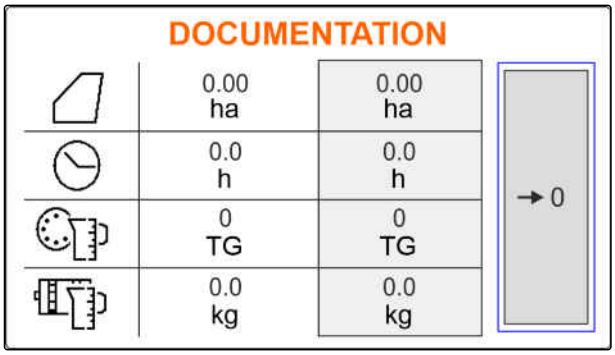
CMS-T-00007126-A.1

12.1 Calling up the documentation

CMS-T-00007127-A.1

▶ press .

➡ A table with the values for the documentation is shown in the menu. The left column shows the total values, and the right column shows the trip values.



CMS-I-00005043

NOTE

The worked area is calculated based on the total working width of the implement. Switched-off rows are not taken into account.

Symbol	Meaning
	Worked area
	Working time
	Spread seed quantity
	Spread fertiliser quantity

12.2 Resetting the trip counter

CMS-T-00007128-A.1

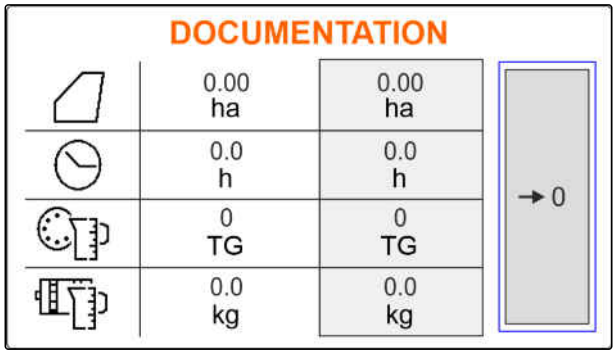
If you want to work on a different field or if a new job is started, the trip counter can be reset to 0.

NOTE

The total values for the selected documentation are maintained.

1. press .

2. press →0 .



CMS-I-00005043

Repairing the implement 13

CMS-T-00007089-A.1

13.1 Handling error messages

CMS-T-00007372-A.1

After a notification ⓘ or a warning ⓘ, the work results of the implement can deviate from expectations. A notification is signalled with a slow beeping acoustic warning signal and a warning is signalled with a rapid beeping acoustic warning signal.

After an alarm STOP, there is a risk of implement damage. An alarm is signalled with a continuous acoustic warning signal.

CMS-I-00005170

1. *If an error message appears on the display,*
   stop working immediately.

2. *To find the proposed solutions for the error code* **1**,
   see *"Troubleshooting"*.

13.2 Troubleshooting

CMS-T-00007090-A.1

Error code	Symbol	Errors	Cause	Solution
F45001		The speed of the fertiliser metering unit is too low. Drive faster.	The metering unit cannot turn slower and is spreading too much fertiliser.	► Drive faster ► Recalibration ► Adjust the spread rate
F45002		The speed of the fertiliser metering unit is too high. Drive slower.	Metering unit cannot turn faster and is spreading too little fertiliser.	► Drive slower ► Recalibration ► Adjust the spread rate
F45003		Setpoint value for the fertiliser metering unit cannot be maintained!	The regulation of the metering system is fluctuating too much.	► Recalibration ► Check the spread rate ► Adjust the spread rate ► Check the metering unit for ease of movement
F45004		Overcurrent at output: fertiliser metering unit. Please check the actuator(s) and wiring harness!	The fertiliser metering drive has exceeded the maximum current limit.	► Check the metering unit for ease of movement ► Actuate the motor at an idle ► Check the power consumption in the diagnosis
F45005		Opto-sensor in the following row is soiled: X	The sensor for seed detection is soiled. This can result is counting errors.	► Clean the sensor as described in the operating manual
F45006		Metering motor not responding	The motor for this row is not running.	► Check the metering unit for ease of movement ► Actuate the motor at an idle ► Check the power consumption in the diagnosis
F45008		Sensor error: Folding monitoring Please check sensor and wiring harness!	No valid signal found at the sensor input for the folding.	► Check the sensor for proper function ► Check the wiring harness

Error code	Symbol	Errors	Cause	Solution
F45009		Setpoint value for the micropellet metering unit cannot be maintained	The regulation of the metering system is fluctuating too much.	► Recalibration ► Check the spread rate ► Adjust the spread rate ► Check the metering unit for ease of movement
F45010		Data is currently not being saved. It is necessary to restart the implement	Communication with the implement is interrupted.	► Restart the implement
F45011		The following software version is not compatible: ...	Wrong software version on the named system.	► Update of the components to a compatible software version is necessary
F45012		Fertiliser metering shaft break detected	The fertiliser metering shaft is defective.	► Repair the fertiliser metering shaft
F45013		Sensor error: Fertiliser metering shaft monitoring	No valid signal found at the sensor input for the metering shaft monitoring.	► Check the sensor for proper function ► Check the wiring harness
F45014		Sensor error: Fertiliser fill level, left	The residual quantity in the hopper set by the user has been reached.	► Refill the hopper
F45015		Sensor error: fertiliser fill level, right	The residual quantity in the hopper set by the user has been reached.	► Refill the hopper
F45016		Sensor error: Ground wheel speed	No valid signal found at the sensor input for the ground wheel speed.	► Check the sensor for proper function ► Check the wiring harness
F45020		No communication to the motor of the fertiliser metering unit	No communication possible between the motor and the implement.	► Check the supply voltage ► Check the wiring harness
F45024		Seed line in the following row is blocked: X	The sensor for counting the grains on the singling unit has detected a blockage.	► Eliminate the blockage on the coulter ► Restart the implement
F45032		Error in the sensor: working position. Please check the sensor and wiring harness!	No valid signal found from the working position sensor.	► Check the position and current value of the sensor ► Check the sensor for proper function ► Check the wiring harness

Error code	Symbol	Errors	Cause	Solution
F45034		Fan nominal speed cannot be maintained.	The fan is operating outside of the set tolerance range.	► Adjust the tolerance range ► Check the speed sensor ► Check the hydraulic supply
F45042		Error in the sensor: calibration button. Please check the sensor and wiring harness.	No valid signal found at the sensor input of the calibration button.	► Check the calibration button ► Check the wiring harness
F45049		Fertiliser fill level alarm limit undercut!	The residual quantity in the hopper set by the user has been reached.	► Refill the hopper
F45050		Working position sensor source has failed!	The signal from the working position sensor is outside of the measuring range.	► Check the working position sensor ► Check the wiring harness
F45051		Internal opto-sensor error in the following row: X	The sensor for counting the grains on the singling unit is faulty.	► Check the plug connections ► Check the degree of soiling of the sensor ► Check the sensor ► Restart the implement
F45053		Micropellet metering unit in the following row is not responding: X	The motor for this row is not running.	► Check the metering unit for ease of movement ► Actuate the motor at an idle ► Check the power consumption in the diagnosis
F45054		Micropellet metering speed is too low, drive faster.	The metering unit cannot turn slower and is spreading too much micropellets.	► Drive faster ► Repeat calibration ► Adjust the spread rate
F45055		Micropellet metering speed is too high, drive slower.	Metering unit cannot turn faster and is spreading too little micropellets.	► Drive slower ► Repeat calibration ► Adjust the spread rate
F45056		Seeding not possible!	The described conditions for seeding have not been met.	► Switch on the metering unit ► Switch on the fan

Error code	Symbol	Errors	Cause	Solution
F45057		Minimum fan speed not reached, metering unit stopped!	The fan speed is less than 200 rpm.	► Check the fan speed ► Check the speed sensor in the Diagnosis menu ► Check the wiring harness
F45058		The source selected for the forward speed is not available. Select an available source.	The source selected for the speed signal is currently no longer available.	► *To use a different signal source,* see *"Configuring the source for the speed signal"*
F45059		Current source for the speed signal is not available! Source will be changed!	The current source for the speed signal is currently no longer available.	► *To use a different signal source,* see *"Configuring the source for the speed signal"*
F45060		A speed signal greater than 0 has been detected. The simulated speed has been deactivated.	The user has switched to a simulated speed. The speed sensor on the implement has detected a speed. As a result, the simulated speed has been deactivated!	► Fix the defect on the sensor (implement) ► *If operation should continue with the simulated speed,* remove the defective sensor (implement) from the wiring harness.
F45062		Minimum pressure was not reached	The pressure for the singling unit is too low.	► Increase the fan speed ► Check the air system and singling unit for leaks ► Check the function of the pressure sensor
F45063		Maximum pressure exceeded	The pressure for the singling unit is too high.	► Reduce the fan speed ► Check the function of the pressure sensor
F45064		Error in the sensor: fan pressure. Please check the sensor and wiring harness	No valid signal found at the sensor input for the fan pressure.	► Check sensor for cleanliness ► Check the sensor for proper function ► Check the wiring harness
F45065		Error in the sensor: fan speed. Please check the sensor and wiring harness	No valid signal found at the sensor input for the fan speed.	► Check the sensor for proper function ► Check the wiring harness

Error code	Symbol	Errors	Cause	Solution
F45066		Maximum fan speed exceeded	The permitted fan speed is too high.	► Reduce the fan speed
F45069		Overcurrent at the output: micropellet metering unit Please check actuator(s) and wiring harness!	The micropellet spreader drive has exceeded the maximum current limit.	► Check the metering unit for ease of movement ► Actuate the motor at an idle ► Check the power consumption in the diagnosis
F45070		Metering unit empty	The low level sensor in the metering unit is not detecting any seed.	► Refill the hopper ► Check the sensor for proper function
F45072		No product flow detected on the following row: X	The sensor for counting the grains on the singling unit is not detecting any grains.	► Eliminate the blockage in the singling unit ► Check function of the singling unit
F45073		Fill level alarm limit for micropellets has been undercut	The residual quantity in the hopper set by the user has been reached.	► Refill the hopper
F45074		Target spread rate was not reached on the following row: X	The sensor for counting the grains is detecting fewer grains than the set target rate.	► Check function and ease of movement of the singling unit ► Check scraper position ► Check hopper fill level ► Check singling unit air supply (open cover) ► Check settings for the alarm limit ► Check the degree of soiling of the sensor ► Check adjustment of the sensitivity for counting the grains

Error code	Symbol	Errors	Cause	Solution
F45075		Target spread rate was exceeded in the following row: X	The sensor for counting the grains is detecting more grains than the set target rate.	► Check function of the singling unit ► Check scraper position ► Check the disc selection ► Check settings for the alarm limit ► Check adjustment of the sensitivity for counting the grains
F45078		The following participant is missing:	A special equipment option is configured, but it cannot be found.	► Check the wiring harness and installation of the participant, e.g. check coulter computer ► Check the setting for the number of rows ► Restart the implement
F45079		The following optional participant is missing:	A special equipment option is configured, but it cannot be found on the bus.	► Check the wiring harness and installation of the participant, e.g. check coulter computer ► Check the setting for the number of rows ► Restart the implement

Appendix

14

CMS-T-00000924-B.1

14.1 Other applicable documents

CMS-T-00000925-B.1

- Operating manual - Precea 3000-A
- Operating manual - Precea 3000/4500/6000
- Operating manual - Precea 4500-2
- Operating manual - Precea 6000-2

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