



Control terminal

AmaPad 2

This operating manual is valid from software version: 4.02



AMAZONE

Original operating instructions

TABLE OF CONTENTS

1 About this operating manual 1

1.1	Meaning of the operating manual	1
1.2	Other applicable documents	1
1.3	Utilised depiction	1
1.3.1	Notes	1
1.3.2	Instructions	2
1.3.3	Lists	3
1.3.4	Item numbers	3
1.3.5	Software texts	4
1.3.6	Orientation paths	4
1.4	Digital operating manual	4
1.5	Your opinion is important	4

2 Assembly instructions 6

3 AmaPad at a glance 7

3.1	Connections and buttons	7
3.2	Basic buttons and LEDs	8
3.3	Rating plate	8

4 Basic operation 9

4.1	Switching on the AmaPad	9
4.2	Switching off the AmaPad	10
4.3	Using the touchscreen	10
4.4	Using the basic buttons	11
4.4.1	Calling up the basic buttons	11
4.5	Switching between the main menus	13

5 User interface at a glance 14

5.1	General warning messages	14
5.2	Warning messages from the Universal Terminal	14
5.3	General control elements	15
5.3.1	Selection list	15

5.3.2	Key pad and number pad	16
-------	------------------------------	----

5.3.3	Assistant	16
-------	-----------------	----

5.4 Operating menu at a glance 17

5.5 Buttons in the operating menu 19

5.5.1	Buttons in the job menu	19
-------	-------------------------------	----

5.5.2	Buttons in the field menu	19
-------	---------------------------------	----

5.5.3	Buttons in the job data menu	19
-------	------------------------------------	----

5.5.4	Buttons in the track line menu	20
-------	--------------------------------------	----

5.5.5	Buttons in the steering options menu ...	20
-------	------------------------------------------	----

5.5.6	Buttons in the GPS nudge menu	20
-------	-------------------------------------	----

5.5.7	Buttons in the map view	21
-------	-------------------------------	----

5.5.8	Buttons in the function menu	21
-------	------------------------------------	----

5.5.9	Buttons on the Universal Terminal	21
-------	-----------------------------------------	----

5.5.10	Other buttons	22
--------	---------------------	----

5.6 Map view at a glance 22

5.7 Dashboard at a glance 23

5.8 Universal Terminal at a glance 24

6 Configuring the AmaPad 25

6.1 Using the setup menu 25

6.2 Entering the user settings 26

6.2.1	Entering the region settings	26
-------	------------------------------------	----

6.2.2	Configuring the lightbar	28
-------	--------------------------------	----

6.2.3	Configuring the environment	31
-------	-----------------------------------	----

6.2.4	Configuring the map	35
-------	---------------------------	----

6.2.5	Changing the user access level	38
-------	--------------------------------------	----

6.2.6	Defining the user controls	39
-------	----------------------------------	----

6.3 Entering the system settings 42

6.3.1	Configuring the functions	42
-------	---------------------------------	----

6.3.2	Configuring the GPS	57
-------	---------------------------	----

6.3.3	Configuring the GPS output	74
-------	----------------------------------	----

6.3.4	Configuring the serial ports	74
-------	------------------------------------	----

6.3.5	Setting the alarms	76
-------	--------------------------	----

6.3.6	Configuring the flag points	78
-------	-----------------------------------	----

6.3.7	Configuring the camera	78
-------	------------------------------	----

6.3.8	Configuring the ISOBUS	80
-------	------------------------------	----

6.4 Configuring a vehicle 85

6.4.1	Creating a new vehicle	85
-------	------------------------------	----

6.4.2	Selecting a vehicle.....	90	9.3	Editing master data.....	122
6.4.3	Importing vehicle data.....	91	9.4	Starting a job.....	123
6.4.4	Copying vehicle data.....	92	9.5	Interrupting a job.....	124
6.4.5	Configuring the steering controller.....	92	9.6	Creating a new job.....	125
6.5	Configuring an implement.....	96	9.7	Importing job data.....	126
6.5.1	Using the implement detection assistant.....	96	9.8	Exporting task data.....	128
6.5.2	Creating a new work implement.....	99	9.9	Selecting a job.....	129
6.5.3	Selecting the implement.....	100	9.10	Filtering jobs.....	130
6.5.4	Importing implement data.....	101	9.11	Sorting jobs.....	131
6.5.5	ECU configuration.....	102	9.12	Deleting a job.....	132
6.5.6	Overlap, setting.....	103	9.13	Editing job data.....	133
6.5.7	Configuring the part-width section control.....	104	9.14	Calling up job information.....	133
6.5.8	Defining the lower limit for the working speed.....	107	9.15	Define working time.....	134
6.5.9	Configuring audio signals.....	108			
6.5.10	Configuring the GPS speed simulation.....	109			
6.5.11	Enabling the GPS NMEA2000 position.....	110			
7	Using the operating menu.....	111	10	Managing fields.....	136
7.1	Using the function menu.....	111	10.1	Creating a new field.....	136
7.1.1	Opening a miniature view.....	111	10.2	Creating a boundary line.....	137
7.1.2	Maximising the miniature view.....	111	10.2.1	Creating the boundary line manually..	137
7.1.3	Using the tabs in the miniature view.....	112	10.2.2	Interrupting the boundary line recording.....	140
7.1.4	Closing a miniature view.....	113	10.2.3	Creating boundary lines with a shape file.....	140
7.2	Using the map view.....	114	10.2.4	Creating the boundary line from the coverage.....	141
7.2.1	Calling up the map view.....	114	10.3	Editing the boundary line.....	144
7.2.2	Enlarging or reducing the map.....	114	10.4	Configuring the headlands.....	145
7.2.3	changing the perspective.....	114	10.5	Setting the headland action.....	146
7.2.4	Panning the map.....	115	10.6	Deleting all boundary lines.....	149
7.2.5	Selecting map layers.....	115	10.7	Setting flag point.....	149
7.3	Configuring the dashboard.....	117	10.7.1	Setting flag points for hazards.....	149
7.3.1	Adding data fields.....	117	10.7.2	Setting custom markers.....	150
7.3.2	Editing data fields.....	117	10.7.3	Setting flag points for GPS drift correction.....	151
8	Working without a job.....	119	10.7.4	Editing flag points.....	153
9	Managing jobs.....	121	11	Using track lines.....	155
9.1	Using the job assistant.....	121	11.1	Selecting the track line pattern.....	155
9.2	Using the quick start.....	121	11.2	Creating a straight A-B line.....	156

11.3	Creating the A-B line manually.....	157
11.4	Creating curved track lines.....	159
11.5	Creating circular track lines	161
11.6	Creating adaptive track lines.....	162
11.7	Using limited steering	163
11.8	Creating tramlines	164
11.9	Creating an automatic turning manoeuvre.....	165
11.10	Re-using track lines.....	167
11.11	Following track lines	169
11.11.1	Checking the track deviation with lightbars.....	169
11.11.2	Checking the track deviation with the dashboard.....	170
11.12	Correcting the track lines	170

12 Correcting the GPS reception... 172

12.1	Performing the GPS drift correction.....	172
12.1.1	Correcting the GPS drift with the GPS drift options.....	172
12.1.2	Correcting the GPS drift with a flag point.....	173
12.2	Correcting the track lines	175
12.2.1	Nudge the track lines in increments ...	175
12.2.2	Nudging the track lines by a specified length.....	175
12.2.3	Nudging the track line to the vehicle position.....	176
12.3	Saving the corrected track lines	177
12.4	Calling up GPS information.....	177

13 Using automatic steering 179

13.1	Steering calibration	179
13.2	Calling up the steering status	180
13.3	Coordinating the automatic steering	183
13.4	Switching on the automatic steering	184
13.5	Delayed automatic steering switch-on	184

13.6	Switching off the automatic steering	185
------	--------------------------------------------	-----

14 Using the Universal Terminal 186

14.1	Opening the Universal Terminal.....	186
14.2	Enlarging the section in the miniature view	187
14.3	Using automatic AUX-N assignments	187
14.4	Managing AUX-N functions	189
14.4.1	Opening the AUX-N assignments.....	189

15 Using automatic reverse drive detection..... 192

16 Using part-width section control..... 193

16.1	Using manual part-width section control	193
16.2	Using automatic part-width section control	195
16.2.1	Using automatic part-width section control.....	195
16.2.2	Setting the automatic part-width section control.....	197

17 Using rate control..... 205

17.1	Using a job with application map....	205
17.2	Adding an application map to a job (shape import).....	207
17.3	Defining a fixed setpoint for rate control.....	211
17.4	Configuring peer control for rate control	212
17.5	Receiving setpoints through the SCU-L adapter	215
17.6	Configuring rate control.....	215
17.6.1	Documenting the product information.	215
17.6.2	Creating a product	217
17.6.3	Saving a mixture	218
17.6.4	Adding a mixture	219
17.7	Selecting the coverage map	220
17.8	Selecting the VRC map.....	222

17.9	Configuring the coverage scale	223
17.9.1	<i>Configuring the coverage scale manually.....</i>	223
17.9.2	<i>Defining the application rate ranges based on the application rate.....</i>	225
18	Rate control in the MiniView	227
18.1	Using rate control in the MiniView..	227
19	Managing inventory data	229
19.1	Using the inventory manager	229
19.2	Exporting job data backups.....	230
20	Defining the camera view	232
20.1	Using the camera	232
21	Using the global start screens..	234
21.1	Saving the global start screen.....	234
21.2	Managing global start screens	234
21.3	Selecting global start screens.....	235
22	Taking screenshots.....	236
23	Using remote support.....	237
24	Troubleshooting	238
24.1	Assigning error codes.....	238
24.2	Evaluating the LED display.....	240
24.3	Calling up the system diagnosis.....	241
24.4	Determining the software version...	242
25	Indexes	243
25.1	GLOSSARY	243
25.2	INDEX	245

About this operating manual

1

CMS-T-00000344-C.1

1.1

Meaning of the operating manual

CMS-T-00000180-B.1

The operating manual is an important document and a part of the electronic product.

1. Before starting work, read and observe the respective sections of the operating manual.
2. Keep the operating manual in a safe place.
3. Keep the operating manual available.
4. Hand over the operating manual to the next user.

1.2

Other applicable documents

CMS-T-00000346-A.1

- Operating manual for the GPS receiver
- Operating manual for the implement software

1.3

Utilised depiction

CMS-T-00000347-B.1

1.3.1 Notes

CMS-T-00000348-A.1



NOTE

Practical tips and instructions help to make optimal use of all the implement functions.

1.3.2 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

1.3.2.1 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

1.3.2.2 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

1.3.3 Lists

CMS-T-00000350-A.1

Lists are used, for example, to show different selection options. Entries in lists are introduced with points.

Example:

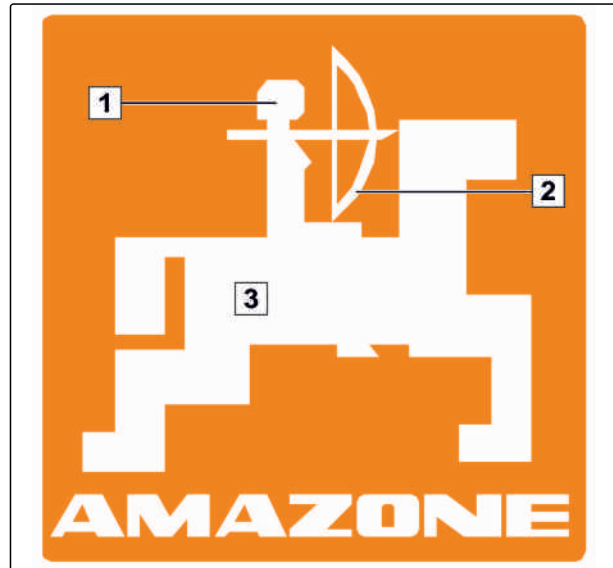
- Entry 1
- Entry 2
- Entry 3

1.3.4 Item numbers

CMS-T-00000351-A.1

Item numbers in the text or in the legend refer to item numbers in figures located beside or above the text. The item numbers in the figures can be connected with item lines.

- 1 Item 1
- 2 Item 2
- 3 Item 3



1.3.5 Software texts

CMS-T-00000474-A.1

Texts from the software interface, are indicated with straight quotation marks.

Example: *"Setup menu"*

1.3.6 Orientation paths

CMS-T-00000352-A.1

Orientation paths contain the names of the menus through which the user must navigate to reach the desired menu.

Example: *"Setup" > "Diagnosis" > "Software versions"*

1.4

Digital operating manual

CMS-T-00002024-B.1

The digital operating manual and e-learning can be downloaded from the Info Portal on the AMAZONE website.

1.5

Your opinion is important

CMS-T-00000353-A.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:

AMAZONEN-WERKE

H. DREYER GmbH & Co. KG

P.O. Box 51

D-49202 Hasbergen

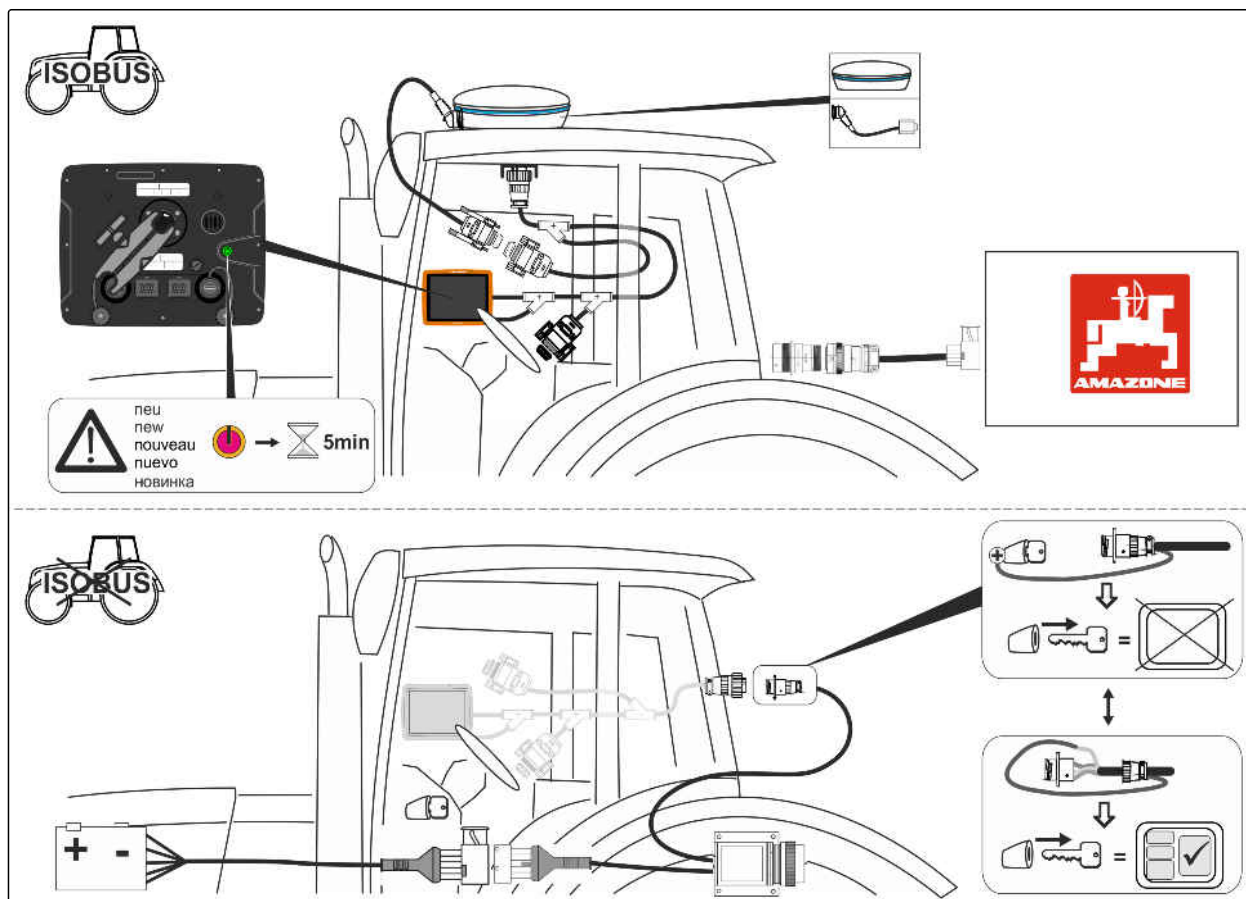
Fax: +49 (0) 5405 501-234

Email: td@amazone.de

Assembly instructions

2

CMS-T-00000575-D.1



AmaPad at a glance

3

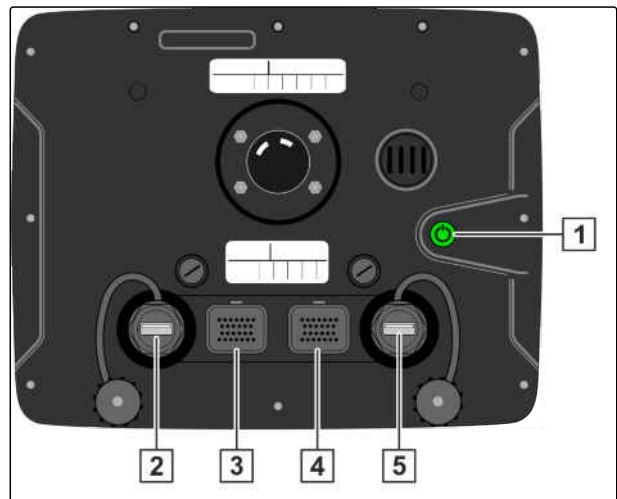
CMS-T-00000500-B.1

3.1

Connections and buttons

CMS-T-00000501-B.1

- 1 On/Off button
- 2 Network connection
- 3 ISOBUS connection cable
- 4 USB port



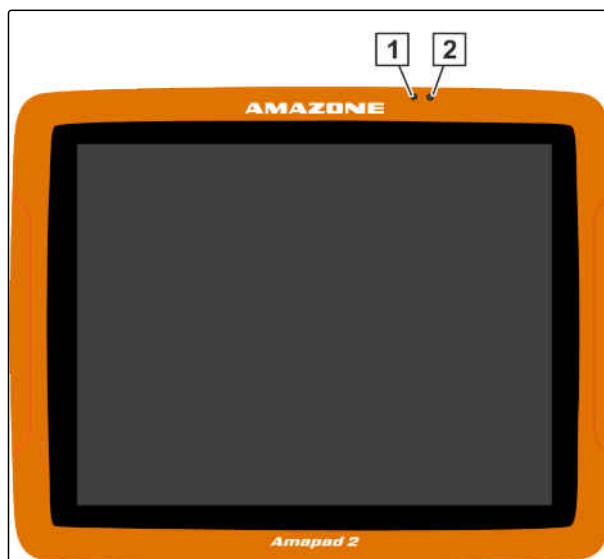
CMS-I-00000264

3.2

Basic buttons and LEDs

CMS-T-00000502-A.1

- 1 Battery status
- 2 Power supply

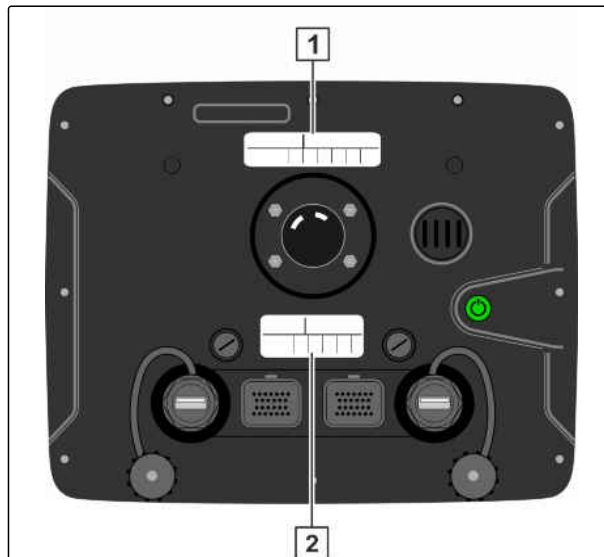


3.3

Rating plate

CMS-T-00000567-B.1

- 1 Amazone rating plate
- 2 TOPCON rating plate



CMS-I-00000396

Basic operation

4

CMS-T-00000477-C.1

4.1

Switching on the AmaPad

CMS-T-00000485-C.1

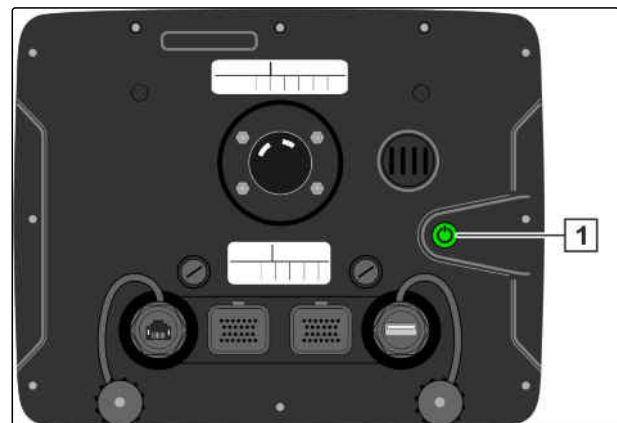
Switching on the AmaPad is possible on the control terminal. Alternatively, the control terminal starts via the tractor ignition, if it is equipped accordingly.

1. Press and hold the green On/Off button **1** on the back of the AmaPad.

➔ The AmaPad is started.

NOTE

To ensure that the operating data is saved, do not interrupt the power supply to the control terminal before switching it off!



CMS-I-00000263

The language for the warning message and the user interface can be changed directly after starting the AmaPad.

2. Open the language list with
3. Select the desired language from the list.

4. Confirm with

➔ A confirmation for restarting is shown.

5. Confirm restart with



CMS-I-000565

After the AmaPad has been started, a warning message containing the terms of use appears. The

terms of use must be confirmed before the AmaPad can be used.

6. Read the terms of use.
7. Confirm the terms of use with "YES".



NOTE

Before confirming, the scroll bar must be moved up in some of the languages.

4.2

Switching off the AmaPad

CMS-T-00000478-C.1

Switching off the AmaPad is possible on the control terminal or alternatively via the tractor ignition, if it is equipped accordingly.



NOTE


To ensure that the operating data is saved, do not interrupt the power supply to the control terminal before switching it off.

1. Briefly press the green On/Off button **1** on the back of the AmaPad.

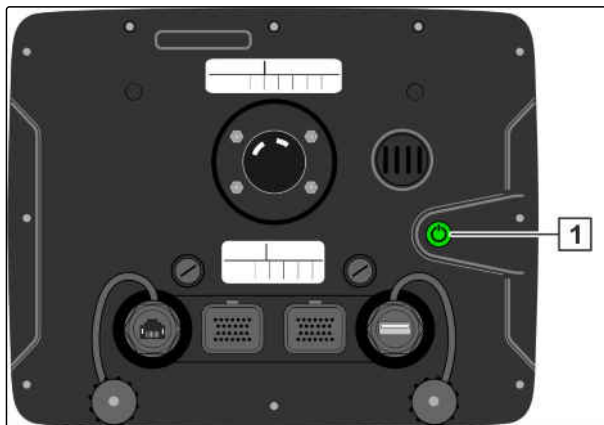
or

On the front, swipe with your finger from the bottom edge of the screen towards the middle of the screen, and select the on/off button on the basic switch area.

➔ A confirmation prompt appears on the display.

2. Confirm with .

➔ The AmaPad is switched off.



CMS-I-00000263

4.3

Using the touchscreen

CMS-T-00000486-A.1

When operating the touchscreen, please observe the following:

The touchscreen covers all areas within the orange-coloured housing.

- During operation, do not rest your hand on the touchscreen, otherwise the AmaPad will not respond.



4.4

Using the basic buttons

CMS-T-00000479-A.1

4.4.1 Calling up the basic buttons

CMS-T-00000555-A.1


The basic buttons are found in a menu at the bottom edge of the screen. The menu can be called up and is hidden again after a few seconds.

- Swipe from the bottom edge of the screen towards the middle of the screen using your finger.






Calling up help

CMS-T-00000480-A.1


1. Call up the basic buttons, see page 11.
 2. Call up the help function with .
- ➔ Question marks appear beside the buttons on the user interface.
3. Select the question mark.
- ➔ The designation for the corresponding button is shown.

Removing the USB flash drive safely

CMS-T-00000481-A.1



1. Call up the basic buttons, see page 11.
2. Safely remove the USB flash drive with .
3. *If a message appears saying that the USB flash drive cannot be removed yet,*
acknowledge the message with  and then
tap on  again.

or

If a message appears saying that the USB flash drive can be safely removed,
acknowledge the message with .
4. Remove the USB flash drive.

Setting the brightness

CMS-T-00000483-A.1


1. Call up the basic buttons, see page 11.
2. Set the desired brightness level with  or .

Selecting the brightness mode

CMS-T-00000484-A.1

The display of the AmaPad has 3 brightness modes:

- Day mode: Brightness is set to 80 %.
- Night mode: Brightness is set to 20 %.
- Automatic: Brightness is automatically adjusted to the light conditions.

1. Call up the basic buttons, see page 11.
2. Switch through the modes with  until the desired mode is set.


4.5

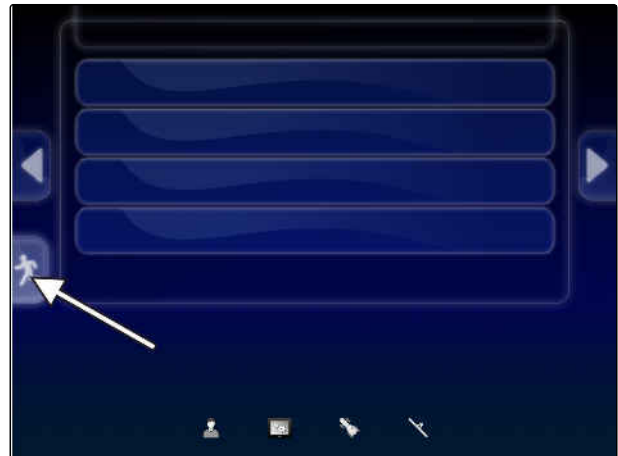
Switching between the main menus

CMS-T-00000023-A.1

Switching to the operating menu


CMS-T-001416-A.1

- In the setup menu, switch to the operating menu with .



Switching to the setup menu

CMS-T-001419-B.1

- In the operating menu, switch to the setup menu with .



User interface at a glance

5

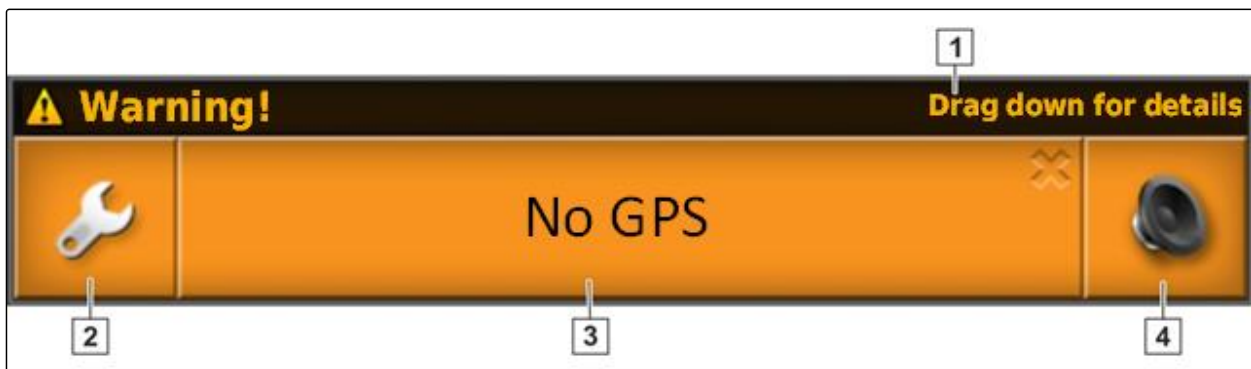
CMS-T-00000020-D.1

5.1

General warning messages

CMS-T-000586-C.1

Warning messages are issued for different events. The functions of a warning message will be explained in the following. For a detailed description of the different warning messages, see page 238.



- 1 When this line is shown, other details regarding the warning message can be called up. To do so, swipe straight down with your finger from the middle of the warning message.
- 2 This button opens the "Configuring general alarms" menu; see page 76.
- 3 The cause for the alarm message is written on this button. This button can also be used to acknowledge the alarm message.
- 4 The alarm tone can be switched off with this button.

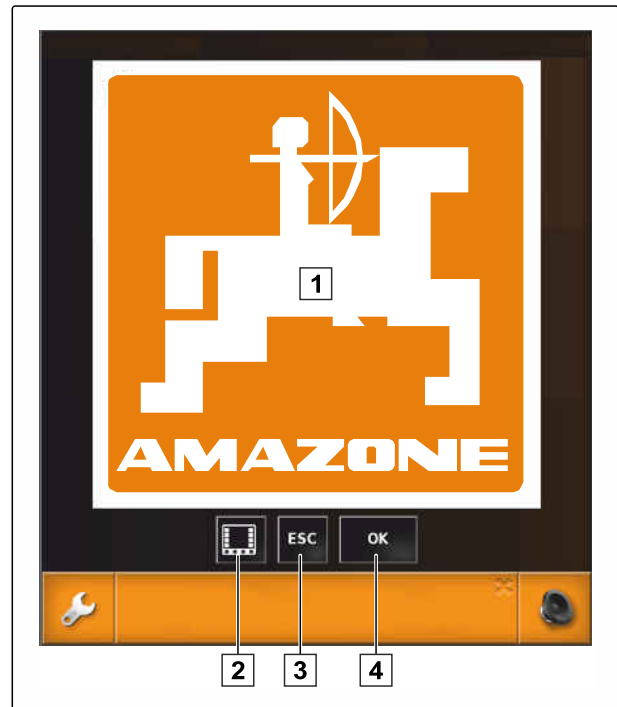
5.2

Warning messages from the Universal Terminal

CMS-T-000972-A.1

The user interface of the implement is shown on the Universal Terminal. When the implement issues an error, a warning message is also shown outside of the Universal Terminal.

- 1** Warning messages that are issued by the implement.
- 2** Switch to the Universal Terminal.
- 3** Close the warning message. Warning message for AMAZONE implements is acknowledged in the ECU.
- 4** Acknowledge the warning message. Warning message is acknowledged in the ECU.



5.3

General control elements

CMS-T-00000024-B.1

5.3.1 Selection list

One or multiple entries can be selected from selections lists. The selected entries are highlighted in white. A message box appears if too many entries are selected.


CMS-T-000596-A.1



5.3.2 Key pad and number pad


CMS-T-000594-C.1


If letters or numbers must be entered, a key pad or number pad appears on the display. The key pad is automatically adapted to the set language.

Confirm entries with .

Cancel entries with .



Increase numerical value with .

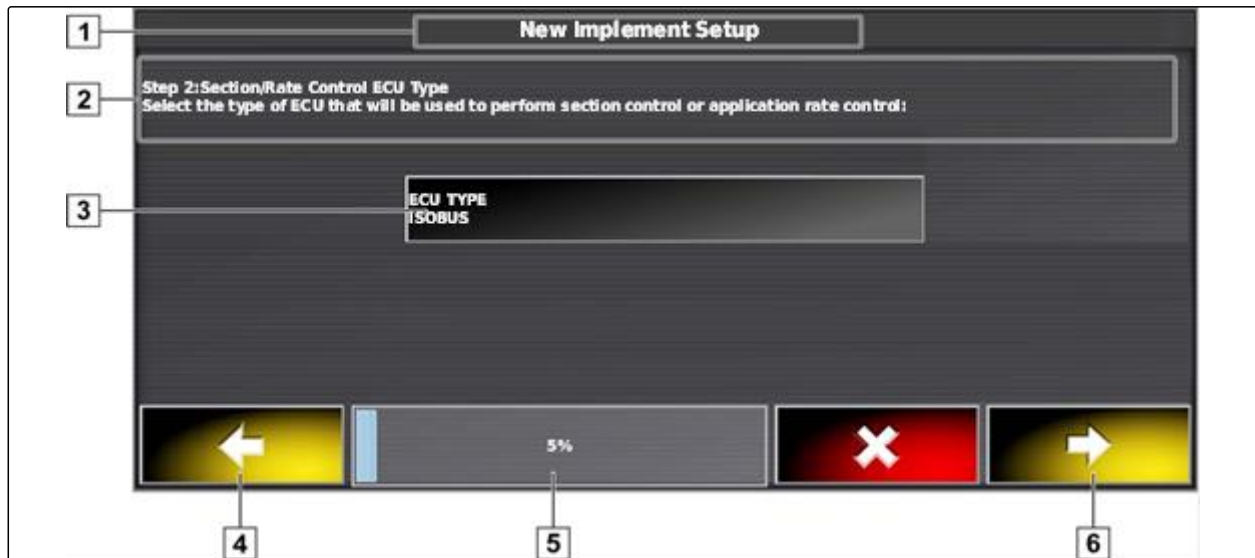
Decrease numerical value with .



5.3.3 Assistant

CMS-T-000590-B.1

Assistants guide the user through complex system settings. The system settings are divided into individual work steps. The work steps explain which information is required. The user can enter the corresponding information using the buttons.



1 Name of the system setting

4 Back

2 Work step

5 Progress in percent

3 Button for the entry

6 Continue

5.4

Operating menu at a glance

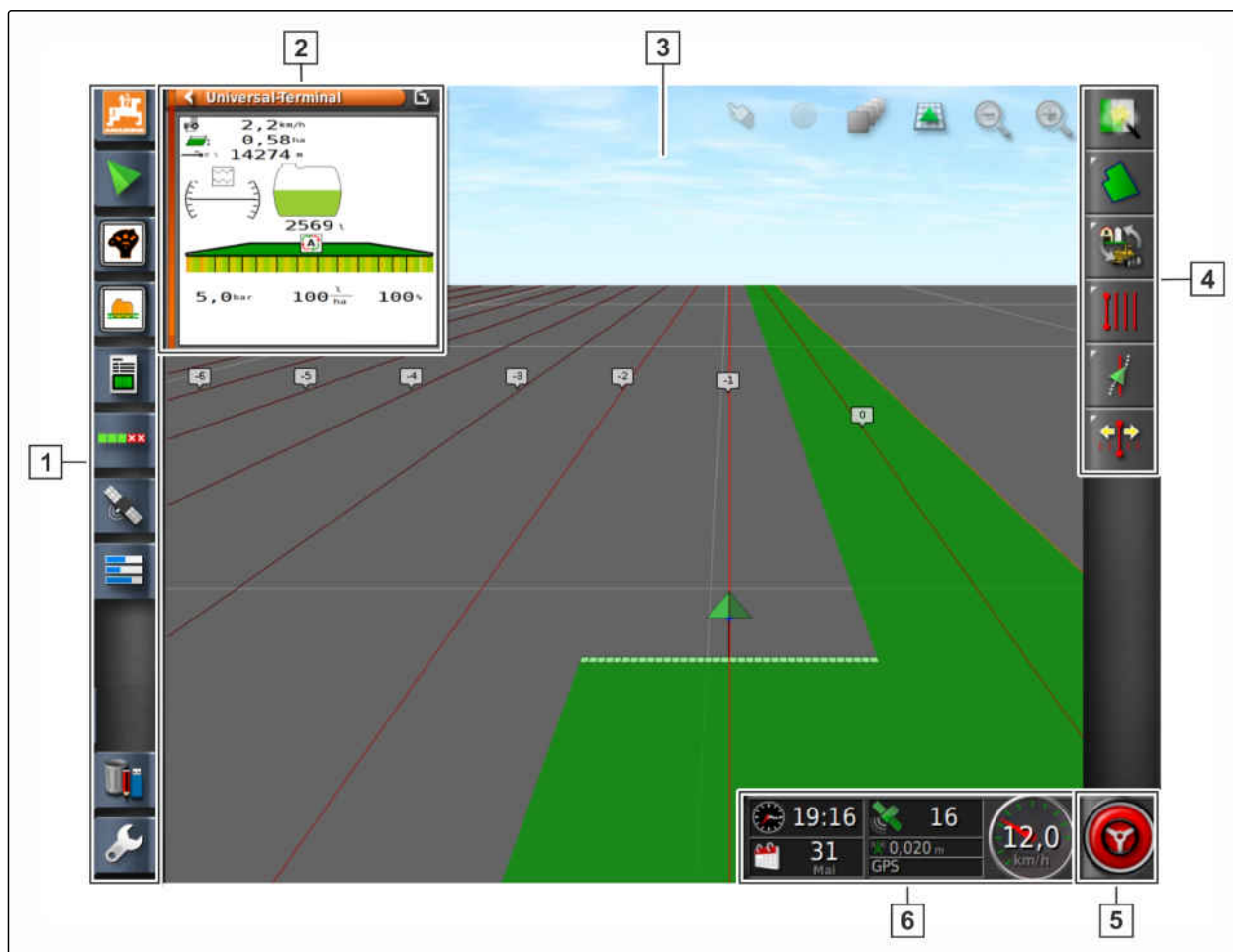
CMS-T-00000437-B.1

The Operating menu is used to call up information and to control the various functions of the AmaPad and the connected ISOBUS implement.



NOTE

Depending on the connected ISOBUS implement and the settings in the Setup menu, different buttons are shown in the Setup menu. Multiple ISOBUS implements can also be shown.



CMS-I-002378

- | | |
|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1 Function menu | 4 Job menu |
| 2 Miniature view | 5 Automatic reverse detection  or automatic steering  |
| 3 Map view | 6 Dashboard |

All of the AmaPad's functions can be controlled using the operating menu:

- Access to the implement controls with the Universal Terminal
- Part-width section control
- Job management
- Track guidance
- Automatic steering
- Camera view








5.5

Buttons in the operating menu

CMS-T-00000025-D.1











5.5.1 Buttons in the job menu

CMS-T-00001890-B.1

Button	Function	Button	Function
	Open the field menu		Open the automatic steering menu
	Open the job data menu		Open the GPS nudge menu
	Open the track line menu		Activate quick start
	Open the job assistant		








5.5.2 Buttons in the field menu

CMS-T-00000577-B.1

Button	Function	Button	Function
	Create a new field		Configure the boundary offset
	Setting flag point		Delete all boundary lines
	Record boundary line		Create boundary line with shape file
	Terminate recording of the boundary line		Create the boundary line from the coverage
	Interrupt the boundary line recording		Configure headlands


















5.5.3 Buttons in the job data menu

CMS-T-003901-C.1

Button	Function	Button	Function
	Delete coverage		Use rate control
	Open the data exchange menu		Start a job
	Create a new job		Interrupt a job
	Select a job		




5.5.4 Buttons in the track line menu

CMS-T-003893-C.1

Button	Function	Button	Function
	Edit A-B line		Create new A-B line
	Edit circular track line		Create new circular track line
	Edit curved track line		Create new curved track line
	Activate adaptive curved track line		Interrupt recording of the curved track line
	Load track line		Set starting point for AB line
	Set starting point for curved track line		Create A-B line manually
	Set end point for curved track line		Set end point for A-B line
	Activate limited steering		Activate tramlines
	Create automatic steering on the headlands		







5.5.5 Buttons in the steering options menu

CMS-T-003891-C.1

Button	Function	Button	Function
	Call up automatic steering status		Calibrate steering
	Coordinate the automatic steering		






5.5.6 Buttons in the GPS nudge menu

CMS-T-003899-C.1

Button	Function	Button	Function
	Open nudge options for track lines		Nudge the closest track line to the vehicle position
	Nudge the track lines to the right		Save the nudged track lines
	Nudge the track line to the left		Open the GPS drift options












5.5.7 Buttons in the map view

CMS-T-006654-C.1

Button	Function	Button	Function
	Indicates whether the selection mode is enabled		Change perspective
	Focus on vehicle symbol		Enlarge or reduce map
	Select map layers		








5.5.8 Buttons in the function menu

CMS-T-00001907-B.1

Button	Function	Button	Function
	Call up software version		Call up GPS information
	Call up map view		Call up system diagnosis
	Open Universal Terminal		Manage inventory data
	Call up job information		Call up setup menu
	Configure automatic part-width section control		Camera
	Master data		






5.5.9 Buttons on the Universal Terminal

CMS-T-007005-C.1

Button	Function	Button	Function
	Quick start		Nudge the selection upwards
	Call up AUX-N setup		Nudge the selection downwards
	Switch between the connected devices.		Cancel
			Confirm

5.5.10 Other buttons

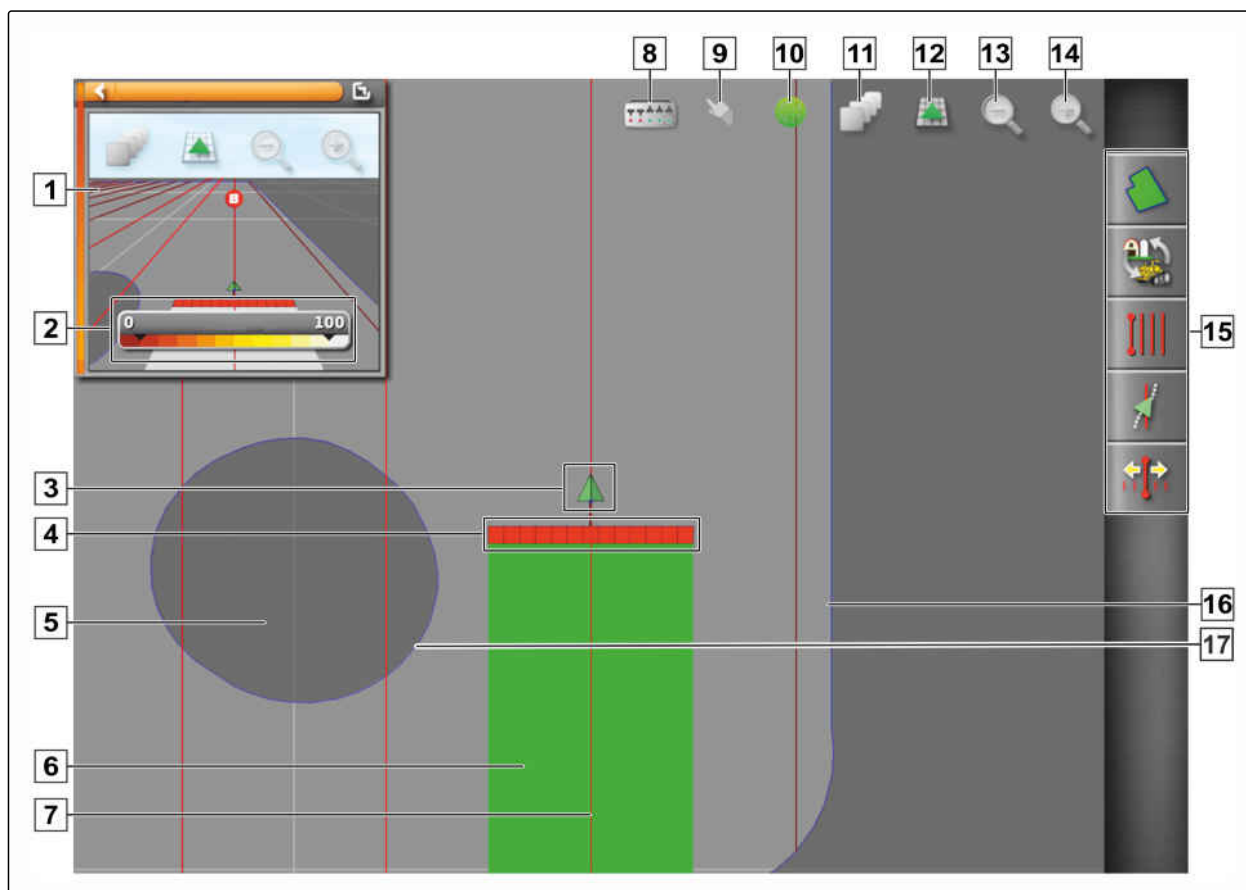
CMS-T-007006-C.1

Button	Function	Button	Function
	Switch automatic part-width section control on or off		Switch automatic steering on or off
	Use global start screen		Select the track line pattern
	Switch main switch on or off		

5.6

Map view at a glance

CMS-T-00000442-B.1



CMS-I-001287

- | | |
|------------------------------------------|------------------------------------|
| 1 Miniature view of the map view | 10 Vehicle focus |
| 2 Configure coverage map | 11 Configure map layers |
| 3 Vehicle symbol | 12 changing the perspective |
| 4 Implement symbol | 13 Reduce map section |
| 5 Exclusion area | 14 Enlarge map section |
| 6 Worked area (coverage), (green) | 15 Job menu |
| 7 Track line (red) | 16 Boundary line |
| 8 Display virtual section switch | 17 Exclusion zone |
| 9 Confirm selection | |

In the map view, all of the data that is required for working a field is created and saved through the job menu. A symbol for the vehicle and a symbol for the connected implement are shown on the map in the map view.

A boundary line can be created to define the field size and use automatic part-width section control. The boundary line is marked on the map with a blue line.

Exclusion areas within a field where the application should be stopped can be marked with a boundary line. Exclusion areas are shaded in dark grey.

To ensure uniform application, track lines can be created to support the driver in following the track. Track lines are also required for automatic steering. Track lines are shown in red on the map.

5.7

Dashboard at a glance

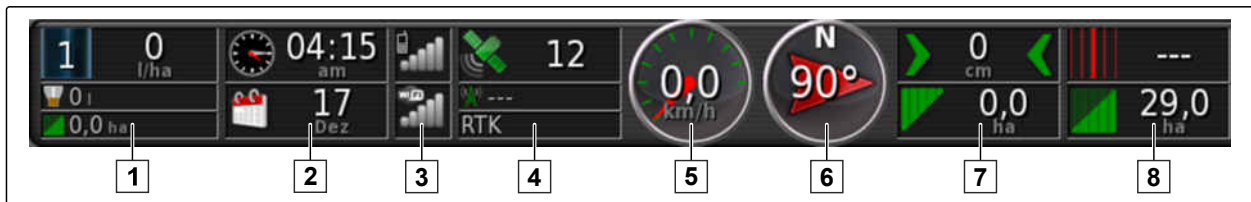
CMS-T-00000443-C.1

The following figure shows the available data fields for the dashboard. The data fields shown depend on the implement. For this reason, the dashboard can be configured depending on the user, see page 117.



NOTE

When the AmaPad is started for the first time, not all of the data fields are enabled.



CMS-I-000586

Data fields on the dashboard

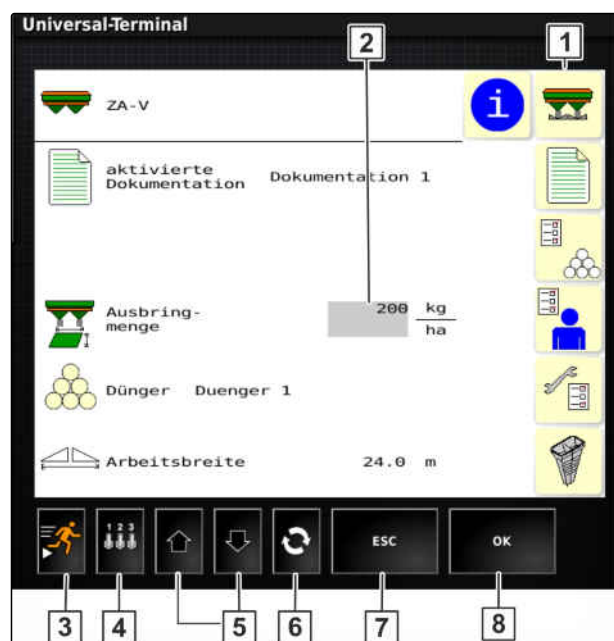
- | | |
|-----------------------------------------------------------------------------------|-----------------------------------|
| 1 Implement data. The displayed data varies depending on the connected implement. | 5 Speed |
| 2 Date and time | 6 Direction of travel |
| 3 GPRS signal strength and WLAN signal strength | 7 Track deviation and worked area |
| 4 GPS data | 8 Track number and remaining area |

5.8

Universal Terminal at a glance

CMS-T-00000459-B.1

- Buttons on the user interface of the ECU (implement control): These buttons can be operated using the touchscreen.
- Input lines: Input lines open the number pad or the key pad to enter characters. A selection list is opened in the selection fields.
- Quick start
- With this button, the menu for the configuration of the AUX-N input is opened. For example, for a multi-function stick or the additional buttons on the AmaPad.
- Switch between the buttons of the user interface.
- Switch between the connected implements.
- Cancel or one menu back.
- Confirm selection, entry or message.



CMS-I-00001137

Configuring the AmaPad

6

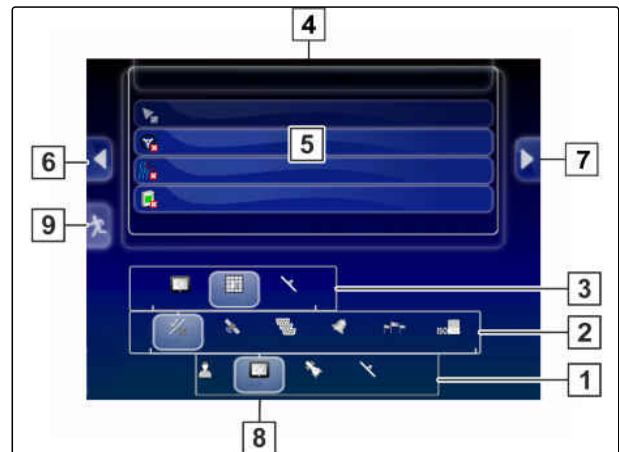
CMS-T-00000503-E.1

6.1

Using the setup menu

CMS-T-000422-D.1

- 1** First menu level
- 2** Second menu level
- 3** Third menu level
- 4** Last menu level
- 5** Enter settings
- 6** Previous menu
- 7** Next menu
- 8** Selected menu
- 9** Exit the setup menu



CMS-I-00001169

In this operating manual, the paths to the settings are displayed as shown opposite.



CMS-I-002493

1. Under **1**, tap on the desired menu item.
➔ The second menu level is opened **2**.
2. Under **2**, tap on the desired menu item.
➔ The third menu level **3** is opened or the last menu level **4** is opened.
3. To enter the settings, tap on the **5** button.

6.2

Entering the user settings

CMS-T-00000504-C.1

6.2.1 Entering the region settings

CMS-T-00000380-B.1

6.2.1.1 Entering the language settings

CMS-T-00000381-A.1

Changing the language

CMS-T-000526-A.1


1. In the setup menu, tap on *"User"* > *"Region"* > *"Language"*.



2. Open the language list with *"Language"*.



3. Select the desired language from the selection list.

4. Confirm with .

5. Exit the setup menu with .

6. Confirm restart with .

Defining the format for the decimal separator

CMS-T-000170-A.1


1. In the setup menu, tap on *"User"* > *"Region"* > *"Language"*.





2. Tap on *"Format for the decimal separator"*.



3. Select the desired format.

4. Confirm with .

5. Exit the setup menu with .
6. Confirm restart with .

6.2.1.2 Setting the time and date

CMS-T-00003553-A.1

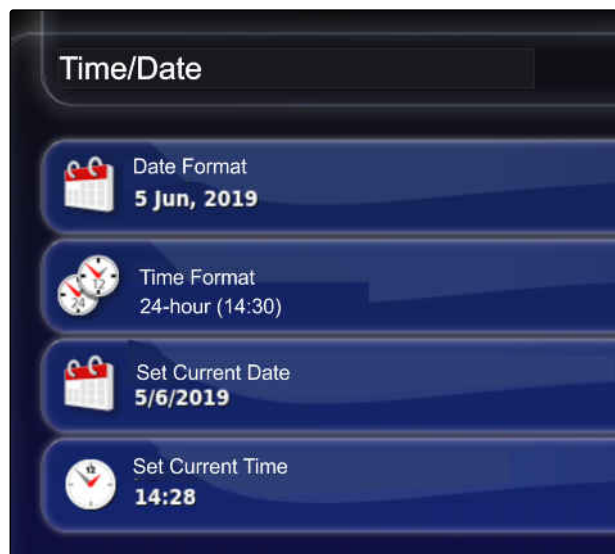
Define the desired format for the date and time.

1. In the setup menu, tap on "User" > "Region" > "Time/Date".




CMS-I-00002536

2. Select the format for the date and time.



CMS-I-00002531

3. Enter the current date and the current time.
4. After entering the data, confirm with .
5. Exit the setup menu.

6.2.1.3 Regional measuring units

CMS-T-00003590-A.1

Various measuring units can be defined for specific countries.

1. In the Setup menu, tap on "User" > "Region" > "Regional measuring units".




CMS-I-00002534

Define the regional measuring units.



CMS-I-00002573

2. Select the measuring units: Metric and Anglo-American (US) or (UK).
3. Define the format for the latitude and longitude as standard or DMS.
4. Select the pressure units: kPa, psi, ba or standard (kPa).
5. Select the area units in hectare (ha), acre (ac) or as standard.
6. Confirm each selection with .
7. To finish, exit the Setup menu and switch to the Operating menu.

6.2.2 Configuring the lightbar

CMS-T-00000507-B.1

Enabling the lightbar

CMS-T-000856-C.1

The lightbar is located at the upper edge of the touchscreen. During operation, the lightbar shows how far the vehicle has deviated from the defined track line.

The lightbar can be enabled and disabled. The other settings are only available when the lightbar has been enabled.

1. In the setup menu, tap on "User" > "Lightbar".



2. Tap on "Lightbar".



3. Select "Enabled".

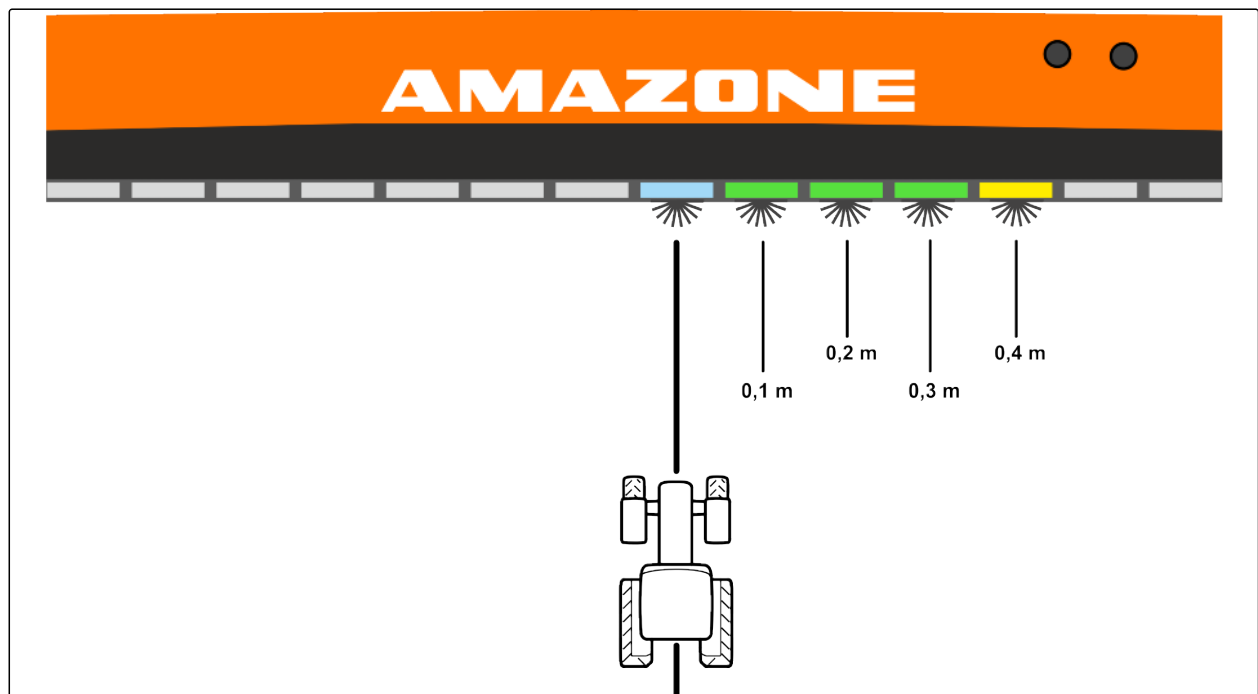
i NOTE

The lightbar only works if there is a GPS signal.
The lit blue LED in the middle of the lightbar indicates that the lightbar is ready for operation.

Defining the LED spacing

CMS-T-00000509-B.1

The spacing between the LEDs specifies how far the vehicle can deviate from the defined track line before the next LED lights up on the lightbar.



Example for the setting 0.1 m

1. In the setup menu, tap on "User" > "Lightbar".




2. Tap on "LED spacing".



Setting range: 0.001 m to 2 m

3. Enter the distance.

4. Confirm with .

Defining the LED mode

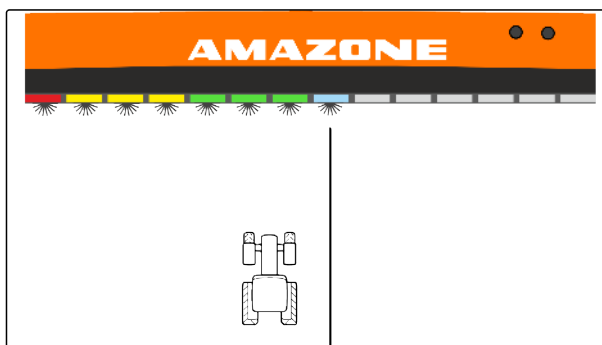
CMS-T-00000508-B.1

The LED mode is used to define the side of the lightbar on which the LEDs start lighting up when the vehicle deviates from the track line.

Possible settings:

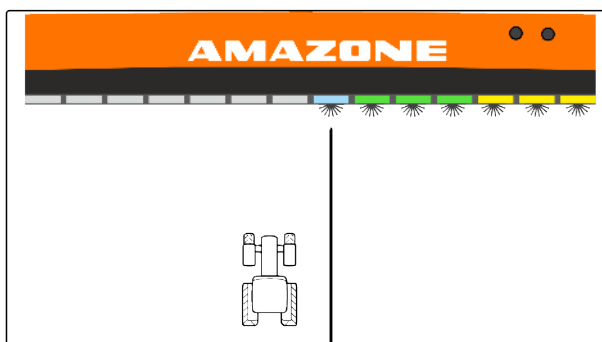
Driving away

The LEDs on the lightbar start lighting up on the side towards which the vehicle is moving.



Driving to

The LEDs on the lightbar start lighting up on the side from which the vehicle is moving away.




1. In the setup menu, tap on "User" > "Lightbar".



2. Tap on "LED mode".



3. Select mode.

4. Confirm with .

6.2.3 Configuring the environment

CMS-T-00000505-C.1

Adjusting the volume

CMS-T-000994-C.1

NOTE



The tones on the AmaPad are switched off when the volume is set to 0 %. The alarm tone for the warning messages from the Universal Terminal cannot be switched off.

1. In the setup menu, tap on "User" > "Environment".



2. Tap on "Volume".



3. Adjust the volume with  and .

Setting the button tones

CMS-T-001009-B.1

1. In the setup menu, tap on *"User"* > *"Environment"*.



2. Tap on *"Button clicks"*.



3. Enable the function

or

disable.

Setting the audio alarm

CMS-T-000990-C.1

The AmaPad can issue various alarms. Here, you can set whether a signal tone is issued.

1. In the setup menu, tap on *"User"* > *"Environment"*.



2. Tap on *"Audio alarm"*.



3. Enable the function

or

disable.

Defining the global start screen mode

CMS-T-001049-D.1

With this setting, the selection mode for the global start screens can be selected.

1. In the setup menu, tap on "User" > "Environment".





CMS-I-002502

2. Tap on "Global start screen mode".



CMS-I-002595

Possible settings:

- Select: The basic switch area  is used to open the "Manage global start screens" menu.
- Switching: The basic switch area  is used to switch between the global start screens

NOTE

For more information on the global start screens, see page 234.

System 150 file transfer

CMS-T-001025-C.1

With the System 150 file transfer, inventory data can be imported and exported in a special format.



NOTE

This function is not available.


- For more information, please contact AMAZONE.

Configuring the status window for the automatic steering

CMS-T-001005-C.1

The function of the automatic steering button can be configured.

Possible settings:

- Disabled: The window for the steering status can only be called up through the job menu.
- Opens automatically: If the automatic steering cannot be started, the window for the steering status will be shown. The window remains open until it is closed with .
- Open and close automatically: If the automatic steering cannot be started, the window for the steering status will be shown. The window remains open until all of the conditions for starting the automatic steering system are fulfilled.

1. In the setup menu, tap on "User" > "Environment".



CMS-I-002502

2. Tap on "Automatic steering status window".



CMS-I-000489

Size of the buttons on the toolbar

CMS-T-001017-B.1

The size of the buttons in the function menu and in the job menu can be adjusted.

1. In the setup menu, tap on *"User"* > *"Environment"*.



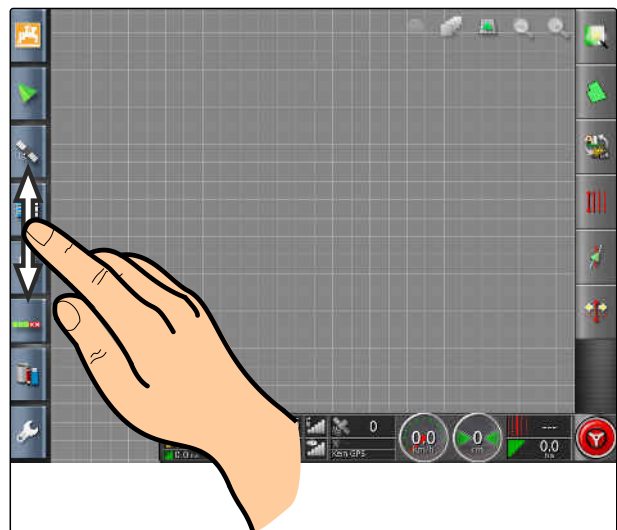
2. Tap on *"Toolbar button size"*.



3. Select the desired size.

i NOTE

When large buttons are selected, the function bar and the job menu must be moved by swiping to be able to use all of the buttons.



6.2.4 Configuring the map

CMS-T-00000027-C.1

Defining the point of focus

CMS-T-000986-C.1

With the point of focus, you can define whether the vehicle symbol or the implement symbol should be centred on the map.

1. In the setup menu, tap on *"User"* > *"Map"*.



2. Tap on *"Point of focus"*.



3. Select the symbol.

Enabling map panning

CMS-T-001021-C.1

With this setting, you can define whether the map can be panned in the map view.


1. In the setup menu, tap on "User" > "Map".



2. Tap on "Map panning".



Possible settings:

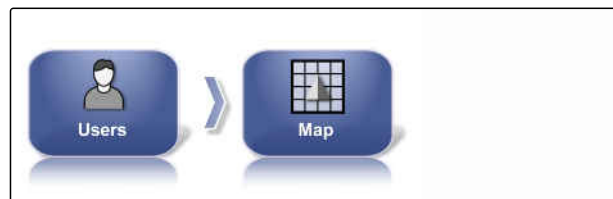
- Enabled: The map can be moved in the map view. The symbol for the vehicle focus will be shown on the map: 
- Disabled: The map cannot be moved in the map view. The symbol for the vehicle focus is not shown.

Map focus auto-shift

CMS-T-001013-C.1

When miniature views are opened in the operating menu, the vehicle symbol can be covered by the miniature views on the map. With the map focus, you can define whether the map should be automatically shifted when miniature views are opened.

1. In the setup menu, tap on "User" > "Map".



2. Tap on "Map focus auto-shift".



Possible settings:

- Enabled: The map is shifted. The vehicle symbol is centred in the middle of the map.
- Disabled: The map is fixed. The vehicle symbol can be covered by miniature views

Highlighting loaded coverage

CMS-T-001029-C.1

With this setting, you can define how the worked area is shown in the map view.

1. In the setup menu, tap on "User" > "Map".



2. Select "Highlight loaded coverage".



Possible settings:

- Enabled: Already worked areas of a job are shown in yellow. New worked areas are shown in green.
- Disabled: Already worked areas of a job are shown in green. New worked areas are also shown in green.

Pausing boundary recording with master

CMS-T-001045-D.1

Manual boundary line recording can be interrupted during application by switching off all of the part-width sections. This has the advantage that the boundary line recording does not have to be interrupted separately when manoeuvring on the field.


1. In the setup menu, tap on "User" > "Map".



2. Select "Pause boundary recording with master".



Possible settings:

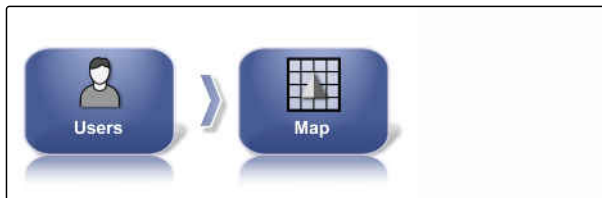
- Enabled: The boundary line recording is interrupted when all of the part-width sections are switched off on the Universal Terminal.
- Disabled: The boundary line recording can only be interrupted using the  button in the field menu.

Defining the visual reference line length

CMS-T-001033-C.1

A line can be shown on the map in front of the vehicle symbol, which assists the driver with manual track guidance.

1. In the setup menu, tap on "User" > "Map".



2. Tap on "Visual reference line length".



Possible settings:

- Value between 0 m and 20 m

6.2.5 Changing the user access level

CMS-T-001041-C.1

To disable certain menus on the AmaPad user interface, different user authorisation levels can be enabled.

1. In the setup menu, tap on "User" > "Access level".



2. Tap on "Access level".



3. Select the access level.

4. Confirm with .



NOTE

The user access levels can be adjusted in the "User controls" menu, see page 39.

6.2.6 Defining the user controls

CMS-T-001862-C.1

With the user controls, the user interface of the AmaPad can be set up for the different user authorisation levels. Individual menus can be hidden, so that these menus can no longer be used by certain users.

3 different user access levels are available.

- Easy
- Standard
- Expert

NOTE

The user access level can be changed in the "Access level" menu.

REQUIREMENTS

- ✓ User access level has been set to "Expert"

1. Select "Setup menu" > "User" > "User controls".



2. To enable or disable the menus for the individual user access levels,

select the  or  buttons in the corresponding column.

Control	Easy	Standard	Expert
Miniview: System Information			
Miniview: GPS			
Miniview: Diagnostics			
Fullview: Diagnostics			
Miniview: Jobs			
Miniview: ASC			
Miniview: Implement Controller			
Miniview: Switchbox			
Miniview: Universal Terminal			
<div> <div>Reset</div> <div>Preview</div> <div>Preview</div> </div>			

3. To see a preview of the configured user interface,
select "Preview" in the corresponding column.

➔ The button is then labelled with "Exit preview".

4. To exit the preview of the configured user interface,
select "Exit preview".

5. To reset all of the settings,
select "Reset".



NOTE

The settings can be reset as follows:

- To the factory settings
- To the version before the AmaPad was switched on last

Activate remote support

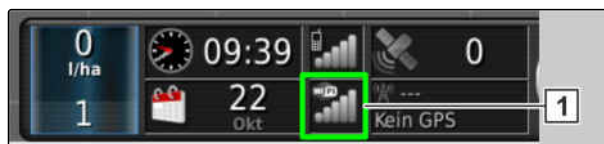
CMS-T-00002203-B.1

With this function, the AmaPad can be remote-controlled through the Internet.



NOTE

Remote support is only used by trained personnel to perform maintenance work on the AmaPad through the Internet.





CMS-I-00001903



REQUIREMENTS

Check wireless connection

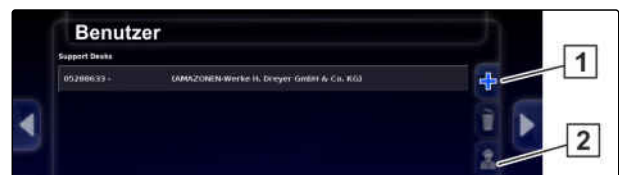
- ✓ WiFi connection is configured
- ✓ Check the display **1** on the dashboard
- ✓  WiFi not available
- ✓  WiFi available
- ✓ Request PIN from the provider for the remote support. It is possible to download a remote support app from the following website "<http://www.topconcare.com/en/agriculture/precision-ag-consoles/x35-console/>" and also from the App Store with the name "Horizon Remote Control"

1. In the Setup menu, tap on "User" > "Remote support".



CMS-I-00001899

Establish a connection to the remote support in the Setup assistant.




CMS-I-00001905

2. If there are no entries, configure a new desk with **1**.
3. Enter the "Desk PIN" from the app.




NOTE

Request directly from the remote controller!

4. Confirm with .

➔ The desk has been created and activated.

5. On  , select **2** and enter the driver's name on the display.
6. Wait until the connection has been established and the driver has confirmed.

➔ The AmaPad can now be remote-controlled.

NOTE

The connection can only be terminated by remote support after finishing the maintenance work!

6.3

Entering the system settings

CMS-T-00000028-D.1

6.3.1 Configuring the functions

CMS-T-00000384-D.1

6.3.1.1 Configuring licenses

CMS-T-00001864-A.1

Available licenses with functions, the status and expiry data are shown. Other license data can be imported or exported to a USB flash drive.


1. In the Setup menu, tap on "System" > "Functions" > "Licenses".

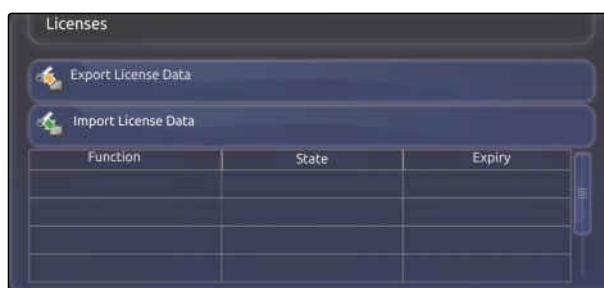


CMS-I-00001134

2. Display the license data.

 Export license data.

 Import license data.



CMS-I-00001133

6.3.1.2 Configuring the functions of the console

CMS-T-00000385-B.1

Function overview of the panel

CMS-T-00002208-A.1

There are various functions that can be activated or deactivated on the panel.

Functions on the panel:

- ISOBUS shortcut button
- Cameras
- Weather station
- XTEND



REQUIREMENTS

- ✓ Licenses are available and activated.

Enabling the cameras

CMS-T-001153-B.1

With the camera function, images from a connected digital camera can be transmitted to the AmaPad.



NOTE

A license and additional hardware must be purchased for this function.



- For more information, please contact AMAZONE.

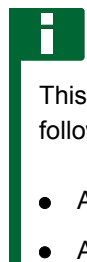
6.3.1.3 Configuring the track guidance system functions

CMS-T-00000386-D.1

Enabling automatic steering

CMS-T-001237-C.1

This function enables or disables the automatic steering system.



NOTE

This function is only available if one of the following GPS receivers has been selected.

- AGI-3
- AGI-4



1. In the Setup menu, tap on "System" > "Functions" > "Map view".



2. Tap on "Automatic steering".



Possible settings:

- Enabled: Automatic steering can be used. In the operating menu, the button for enabling automatic steering appears: . In the job menu, the button for the steering options menu is shown: .
- Disabled: Automatic steering cannot be used.

Enabling reverse detection

CMS-T-001145-D.1

This function enables or disables the automatic reverse detection.

NOTE

This function is only available if one of the following GPS receivers has been selected.

- SGR-1
- NMEA source

1. In the setup menu, tap on "System" > "Functions" > "Track guidance".




CMS-I-00001139

2. Tap on "Reverse detection".



CMS-I-000975

Possible settings:

- Enabled: Reverse driving of the vehicle is automatically detected and the vehicle symbol moves backwards on the map. In the operating menu, the button for automatic reverse detection appears: 
- Disabled: Reverse driving of the vehicle is not detected. When the vehicle drives in reverse, the vehicle symbol is turned on the map.

Enabling controlled traffic

CMS-T-001205-B.1

Additional track patterns can be activated with this function.



NOTE

A license must be purchased for this function.



- For more information, please contact AMAZONE.

Enabling help for job processing

CMS-T-001187-D.1

The job helper mode assists the user in executing functions.

1. In the setup menu, tap on "System" > "Functions" > "Track guidance".



CMS-I-002493

2. Tap on "Help with job processing".



CMS-I-002600

Possible settings:

- Disabled
- Job assistant: the menu point "Job assistant" is added in the job menu. For more information, see page 119.
- Quick start: In the "Functions" menu and in the job menu, the menu item "Quick start" will be added. Work procedures can be automated with the quick start function. For more information, see page 52.

Enabling track line patterns

CMS-T-003485-D.1

The track line patterns can be enabled or disabled. When the track line patterns are disabled, the track line pattern can no longer be selected in the Operating menu.

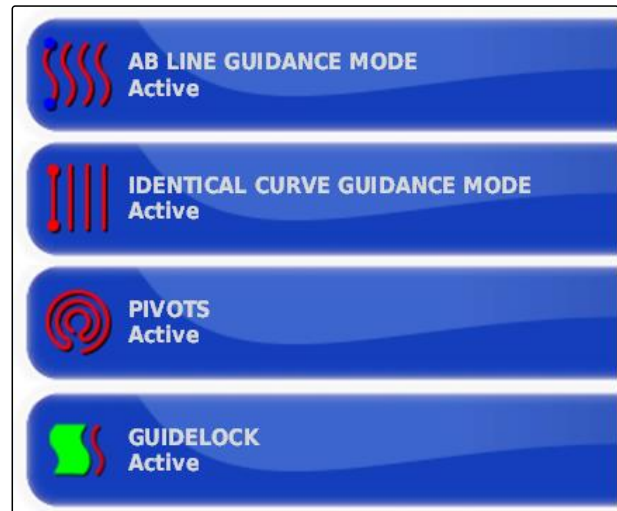
- A-B line: Creates a line between two points
- Curved track line: Creates a track line with curves
- Circular track lines: Creates track guide lines for circular areas
- Guidelock: Creates only temporary track lines beside the worked area

1. In the setup menu, tap on "System" > "Functions" > "Track guidance".



CMS-I-00001139

2. Select the desired track line pattern.
3. Enable or disable track line patterns.



CMS-I-002604

Enabling track line on field boundary

CMS-T-00001817-B.1

The function creates a track line that follows the field boundary.

1. In the setup menu, tap on "System" > "Functions" > "Track guidance".



CMS-I-00001139

2. Tap on "Track line on field boundary".

Possible settings:

- Enabled: This function creates track lines for driving within the field boundaries or outside of exclusion areas.
- Disabled: No track line guidance



CMS-I-00002537

Activating tramlines

CMS-T-00001818-B.1

This function activates or deactivates the display of the tramlines. This display serves to check the tramlines to be created. The tramlines can be saved as track guide lines to be able to use them for cultivating measures.



NOTE

Function can only be used with seed drills!

✓ REQUIREMENTS

- ✓ Track lines are created

1. In the setup menu, tap on "System" > "Functions" > "Track guidance".



CMS-I-00001139

2. Tap on "Tramlines".

Possible settings:

- Activated: Tramlines will be created and saved.
- Deactivated: No tramlines will be created.



CMS-I-00001102

Enabling ISOBUS tramline control

CMS-T-00002674-A.1

This function enables or disables the display of ISOBUS tramlines. This display serves to check the tramlines to be created. The tramlines can be saved as track guide lines to be able to use them for cultivating measures.

i NOTE

Function can only be used with seed drills!

✓ REQUIREMENTS

- ✓ Track lines are created
- ✓ The implement must support the function

1. In the setup menu, tap on "System" > "Functions" > "Track guidance".



CMS-I-00001139

2. Tap on "ISOBUS tramline control".

Possible settings:

- Enabled: Track line information is transmitted to the implement.
- Disabled: No information is transmitted.



CMS-I-00002408

Activating automatic steering on the headlands

CMS-T-00001819-B.1

This function enables automatic steering or manoeuvring on the headlands.

REQUIREMENTS

- ✓ License required

1. In the setup menu, tap on "System" > "Functions" > "Track guidance".



CMS-I-00001139

2. Tap on "Headland".

Possible settings:

- Activated: The implement steers automatically on the headlands.
- Deactivated: No automatic steering on the headlands.



CMS-I-00001103

6.3.1.4 Configuring the implement functions

CMS-T-00000387-B.1

Enabling water conservation

CMS-T-001265-B.1

NOTE

A license must be purchased for this function.

- For more information, please contact AMAZONE.



Locking the setup menu

CMS-T-002410-B.1

When this function is enabled, access to the setup menu is locked as long as a job is started.

1. Select "Setup menu" > "System" > "Functions" > "Implement".



2. Select "Lock setup menu when job started".



3. Enable the function

or

disable.

6.3.1.5 WiFi configuration

CMS-T-00002206-B.1

Activating the network connection with the AmaPad 2

CMS-T-001275-D.1

With the AmaPad 2, a network connection can be configured using a WiFi USB adapter. This can be implemented for remote control (RemoteControl) or for data transmission (as of end of 2019). A WiFi USB adapter is included in the scope of delivery of the AmaPad for the wireless connection.



NOTE

Remote control is only used by trained personnel to perform maintenance work on the AmaPad 2 through the Internet.



REQUIREMENTS

- ✓ Configure tethering and a mobile hotspot using your own smartphone
- ✓ Keep the name of the network and the WPA2 key at hand
- ✓ WiFi adapter is available

1. Insert the WiFi USB adapter.
2. In the Setup menu, tap on "System" > "Functions" > "USB Wi-Fi".



CMS-I-00001896

3. Tap on *"Wireless connection"*.




CMS-I-00001890


4. Select *"Enabled"*.
5. Setup assistance is started to establish the wireless connection to a wireless network. Press



to start the procedure.

6. Select the desired network from the search results.
7. *To configure the WiFi*, enter the *"network key (WPA2)"* for the hotspot and confirm with  after connecting.

8. Press  to continue the procedure.

9. Confirm once more with .

NOTE

The procedure can be cancelled at any time with



Configuring the system

CMS-T-00003587-A.1

With this function, a name can be assigned to the console.



REQUIREMENTS

- ✓ Tethering and mobile hotspot is configured using your own smartphone

1. Tap on "System".



CMS-I-00002566

2. Enter the console name on the display.



CMS-I-00002567

3. After entering the name, confirm with .

6.3.1.6 Configuring the quick start

CMS-T-00000388-C.1

Enabling options

CMS-T-00000389-C.1

The quick start enables the automation of work procedures. In the "Options" list, the work procedures can be selected. The selected work procedure can then be enabled or disabled. Several work procedures can be adjusted.

When the quick start button has been selected in the job menu, all of the activated work procedures will be executed successively.



NOTE

For more information on using the quick start, see page 121.

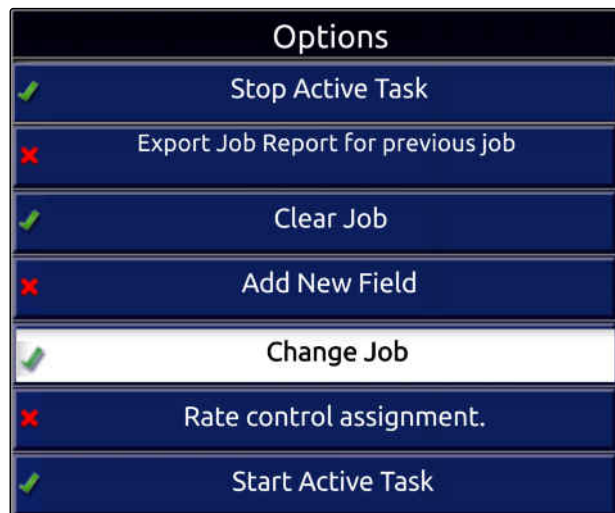
✓ REQUIREMENTS

- ✓ Quick start is enabled; see page 45

1. In the setup menu, tap on "System" > "Functions" > "Quick start".



2. Tap on the desired options in the list.



3. Enable the options under "Option status".



For some of the options, other settings can be entered. In these cases, additional buttons are shown under the "Option status" button.

4. *If other settings are required,*
tap on the displayed buttons and enter the settings.

Options	Working procedures	Additional settings	Prerequisites
Stop active job	The active job and the application will be stopped.		None
Export job report for the previous job.	Exports the job report for all saved jobs.		<ul style="list-style-type: none"> The current job is stopped. USB flash drive is connected.
Delete active job	Deletes the recorded coverage of the current job and the generated job statistics.	<p>"Confirm before deleting":</p> <ul style="list-style-type: none"> When this setting is enabled, a prompt to confirm will be shown <p>"Delete options":</p> <ul style="list-style-type: none"> Selection of the data that should be deleted. 	The current job is stopped.
Add new field	Opens the menu where a new field can be created.	<p>"Create name for field":</p> <ul style="list-style-type: none"> "Standard": The new field is given the date and the time of creation as a name. "User-defined": Another setting will be shown. A user-defined name can be given. "Prompt": When the field is created, a text box is opened in which the name must be entered. 	None
Change job	Changes the current job.	see page 56	The current job is stopped.
Assign rate control	Opens the menu where the rate control can be assigned to an implement.	see page 205	<ul style="list-style-type: none"> Implement is selected. Job is selected.
Start active job	Starts the current job.		Job is selected.
Adjust the boundary line offset	Opens the menu where the boundary offset can be adjusted.		None

Options	Working procedures	Additional settings	Prerequisites
Record boundary line	Starts recording of the boundary line.		None
Set GPS drift correction	Opens the GPS drift options		None
Create flag point	Opens the menu where a flag point can be created.		None
Set track line pattern	Sets the selected track pattern.	"Track line pattern": <ul style="list-style-type: none"> Track lines will be created with the set track line pattern. 	None
Change track line	Start the recording of the selected track line or opens the menu where track lines can be loaded.	"Measure": <ul style="list-style-type: none"> Select track line: The menu for selecting a track line will be opened Create track line: The menu for creating a track line will be opened "Create name for track line": <ul style="list-style-type: none"> "Standard": The new job is given the date and the time of creation as a name. "User-defined": Another setting will be shown. A user-defined name can be given. "Prompt": When the job is created, a text box is opened in which the name must be entered. 	Under <i>"Adjust track guidance mode"</i> , A-B line, identical curves or circular track is selected.

Options	Working procedures	Additional settings	Prerequisites
Hide on success	The quick-start info will be automatically closed when the work procedure has been successfully completed.	<p>"Measure":</p> <ul style="list-style-type: none"> Select track line: The menu for selecting a track line will be opened Create track line: The menu for creating a track line will be opened <p>"Create name for track line":</p> <ul style="list-style-type: none"> "Standard": The new job is given the date and the time of creation as a name. "User-defined": Another setting will be shown. A user-defined name can be given. "Prompt": When the job is created, a text box is opened in which the name must be entered. 	None

Configuring the "Change job" option

CMS-T-006668-A.1

1. Enable the option with "Option status".



Under **"Measures"**, the following settings are possible:

- **"Select job":** The menu for selecting a job will be opened.
- **"No job":** The current job will be deleted. Possible to work without a job.
- **"Create job":** A new job will be created. Additional settings are required.



2. Select the desired setting under **"Measure"**.
3. If **"Create job"** was selected under **"Measure"**, continue with the following points.

4. Under "Create name for job", select how the name should be created for the new job.

Possible settings:

- "Standard": The new job is given the date and the time of creation as a name.
- "User-defined": Another setting will be shown. A user-defined name can be given.
- "Prompt": When the job is created, a text box is opened in which the name must be entered.

5. If a field should be selected or created for the new job, enable the "Open selected field menu" setting.

6. If the new job should be created without previously editing the job data, enable the "Accept without showing the editing menu" setting.



6.3.2 Configuring the GPS

CMS-T-00000390-C.1

6.3.2.1 Configuring the GPS receiver

CMS-T-00000391-C.1

Selecting the GPS receiver

CMS-T-001241-C.1

The AmaPad can process GPS signals from an external receiver. To do so, the connected GPS receiver must be selected.

i NOTE

The AmaPad can only process GPS signals from an external GPS receiver if the GPS receiver is capable of emitting the signals in the required format.

Required GPS signals:

- GGA (at least 5 Hz)
- VTG (at least 5 Hz)
- ZDA (at least 1 Hz)

To obtain more information on the configuration of the GPS receiver, contact the manufacturer.

1. In the setup menu, tap on "System" > "GPS" > "Receiver".



CMS-I-002538

2. Tap on "GPS receiver".



CMS-I-000992

3. Select the connected GPS receiver from the list.

NOTE

Recommended setting:

- For AMAZONE Pantera with automatic steering system: "AGI-4"
- For other AMAZONE GPS receivers: "NMEA source"
- When the GPS signal is sent via CAN bus, e.g. from the tractor: NMEA 2000

Updating the firmware

CMS-T-000462-D.1

The firmware for the connected GPS receiver can be updated. The update is loaded onto the terminal together with the update for the AmaPad software using the USB flash drive.

NOTE

Firmware upgrades can only be performed on the following GPS receivers:

- SGR-1
- AGI-3
- AGI-4

1. In the setup menu, tap on "System" > "GPS" > "Receiver".



CMS-I-002538

2. Tap on *"Firmware upgrade"*.



CMS-I-001003

3. Confirm the update.

➔ A warning is shown saying that the AmaPad must not be switched off.

4. Acknowledge the warning.

➔ The firmware upgrade starts.

➔ The AmaPad will be restarted after the firmware upgrade.

Using the ignition line

CMS-T-001253-B.1



NOTE

This function is only available for the following GPS receivers:

AGI-4

1. In the setup menu, tap on *"System"* > *"GPS"* > *"Receiver"*.



2. Tap on *"Use ignition line"*.



Possible settings:

- Enabled: When the vehicle is switched off, the GPS receiver power supply comes from the vehicle battery.
- Disabled: When the vehicle is switched off, the GPS receiver power supply is interrupted.



NOTE

Recommended setting:

Deactivated

Setting the battery runtime

CMS-T-001261-B.1

The battery runtime shows how long the GPS receiver remains active after the vehicle has been switched off.

NOTE

This function is only available for the following GPS receivers:

AGI-4

1. In the setup menu, tap on "System" > "GPS" > "Receiver".



2. Tap on "Battery runtime".



Loading OAF files

CMS-T-000380-C.1

An OAF file allows the functions of the GPS receiver, such as applications, to be activated.

REQUIREMENTS

- ✓ OAF file ordered from AMAZONE
- ✓ One of the following GPS receivers has been selected:
 - AGI-3
 - AGI-4

1. In the setup menu, tap on "System" > "GPS" > "Receiver".



CMS-I-002538

2. Tap on "Load OAF file".



CMS-I-000999

3. Follow the instructions on the screen.

Set the baud rate

CMS-T-001177-B.1

The baud rate refers to the transmission speed of the GPS receiver.

1. In the setup menu, tap on "System" > "GPS" > "Receiver".



2. Tap on "Baud rate".



3. Select the recommended baud rate.



NOTE

Recommended baud rates:

- For AMAZONE GPS receiver: 19200
- For AGI-4: 115200

More information can be found in the GPS receiver operating manual.

6.3.2.2 Configuring the correction signal

CMS-T-00000393-C.1

Selecting the correction source

CMS-T-001257-D.1

Correction sources improve the accuracy of the GPS position. They are only available with the AGI-4 GPS receiver.



NOTE

The following correction sources are supported:

- Autonomous: With this setting, the GPS signal will not be corrected. The signal can only be received from more GPS satellites. Moreover, Glonass can be enabled.
- WAAS
- EGNOS
- MSAS
- OmniSTAR
- TopNET Global D
- RTK
- RTK (external modem)
- RTK NTRIP

1. In the setup menu, tap on *"System"* > *"GPS"* > *"Correction"*.



CMS-I-002457

2. Tap on *"Correction source"*.



CMS-I-000877

3. Choose the correction source from the selection list.
4. Configure the selected correction source.

WAAS configuration

CMS-T-00000569-B.1

For the WAAS correction source, the available satellites must be activated. The GPS receiver uses the Wide Area Augmentation System. Only suitable for North America. Precision: Under one metre.



NOTE

The available satellites are published on the Internet. Each satellite can be identified with the PRN number.

1. In the setup menu, tap on "System" > "GPS" > "Correction".



CMS-I-002457

2. Tap on the desired satellite.



CMS-I-00000400

3. Activate

or

deactivate.

EGNOS configuration

CMS-T-00000570-B.1

For the EGNOS correction source, the available satellites must be activated. The GPS receiver uses the European Geostationary Navigation Overlay Service. Only suitable for Europe. Precision: Under one metre.



NOTE

The available satellites are published on the Internet. Each satellite can be identified with the PRN number.

1. In the setup menu, tap on "System" > "GPS" > "Correction".



CMS-I-002457

2. Tap on the desired satellite.



CMS-I-00000400

3. Activate

or

deactivate.

MSAS configuration

CMS-T-00000571-B.1

For the MSAS correction source, the available satellites must be activated. The GPS receiver uses the Multi-functional Satellite Augmentation System. Only suitable for Eastern Asia. Precision: Under one metre.

NOTE

The available satellites are published on the Internet. Each satellite can be identified with the PRN number.

1. In the setup menu, tap on *"System"* > *"GPS"* > *"Correction"*.



CMS-I-002457

2. Tap on the desired satellite.



CMS-I-00000400

3. Activate

or

deactivate.

OmniSTAR and TopNET Global D configuration

CMS-T-00000572-B.1

The correct region must be set to use the OmniSTAR and TopNET Global D correction sources. A license is required to use this correction source. The OAF license file can be ordered from AMAZONE.

NOTE

The region must be set for all OmniSTAR and TopNET Global D correction sources, see page 60. The correct frequency is then automatically set.

1. In the setup menu, tap on "System" > "GPS" > "Correction".




CMS-I-002457

2. Tap on "Region".



CMS-I-00000401

3. Select the desired region from the list.

4. Confirm with .

RTK configuration

CMS-T-00001925-B.1

Depending on the selected correction source, the options to be defined can vary.

Corrections sources for RTK	
RTK (radio)	Additional hardware is required to use the paid RTK correction source. The hardware can be purchased through AMAZONE. Access data for the base station is required.
RTK (external modem)	External modem that is connected to the GPS receiver and enables processing of the RTK correction signal. An external license is required to receiver AGI4. Additional hardware is required to use the paid RTK correction source. The hardware can be purchased through AMAZONE.
RTK (NTRIP)	The paid RTK NTRIP correction source works through a mobile phone from a network provider. Internet access is required for this. Additional hardware is required. The hardware can be purchased through AMAZONE.

1. In the setup menu, tap on "System" > "GPS" > "Correction".



CMS-I-002457

2. RTK NTRIP: Select the "NTRIP source".

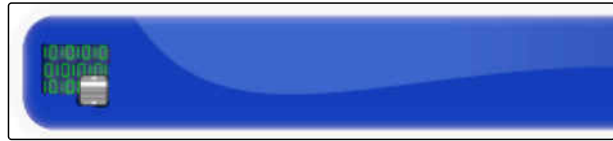


CMS-I-00001144

i NOTE

For AMAZONE implements, it is best to select AM53.

3. Select "*RTK protocol*". In the RTK protocol, data is recorded between the RTK base station and the tractor. Request data for the base station from the provider to enable transmission.



CMS-I-00001145

4. RTK (external modem): Select the "*Modem*".



CMS-I-00001146

i NOTE

Select Satel Easy as the default modem.

5. RTK (external modem): Activate the "*GGA output*".



CMS-I-00001142

or

deactivate.

i NOTE

When this function is activated, the position (GGA) of the tractor is transmitted to the network provider.

Enabling GLONASS

CMS-T-003488-C.1

GLONASS is the Russian satellite navigation system. If not enough satellites are available for a GPS signal, the AmaPad can fall back on the GLONASS satellites.



NOTE

When GLONASS is enabled, signals from GPS satellites are no longer received, even if sufficient GPS satellites are available again.

GLONASS can be enabled for the following correction sources

- Autonomous
- Automatic
- OmniSTAR XP
- OmniSTAR HP
- OmniSTAR G2
- RTK
- RTK (external modem)
- RTK NTRIP

1. In the setup menu, tap on "System" > "GPS" > "Correction".



CMS-I-002457

2. Tap on "GLONASS".



CMS-I-000824

3. Enable the function

or

deactivate.

Enabling Trupass

CMS-T-003491-B.1

Trupass TM improves the precision of the track lines.

1. In the setup menu, tap on "System" > "GPS" > "Correction".



2. Tap on "Trupass TM".



3. Enable the function

or

disable.

Enabling the fallback system

CMS-T-003494-B.1

When the GPS signal is too imprecise, the automatic steering system cannot be started. The fallback system allows the AmaPad to fall back on the GPS signal with the next lowest precision to still be able to start the automatic steering system.

1. In the setup menu, tap on "System" > "GPS" > "Correction".



2. Tap on "Fallback".



3. Enable the function

or

disable.

6.3.2.3 RTK configuration

CMS-T-00002210-B.1

RTK (radio) configuration

CMS-T-00001960-A.1

RTK must be received per radio signal. The RTK correction source provides high position accuracy when the required data from the provider has been entered.

1. In the Setup menu, tap on "System" > "GPS" > "RTK".



CMS-I-00001141

2. When RTK is selected, a Setup assistant is started to detect the connected modem. Press



to start the procedure.

3. The procedure can be cancelled at any time with



4. When the procedure is complete, the modem has been detected, confirm with



5. Tap on "*Frequency*" and enter the utilised frequency in MHz.



CMS-I-00001147

6. Tap on "*Channel spacing*" and enter the frequency spacing between neighbouring areas in a frequency plan in kHz.



CMS-I-00001152

7. Tap on "*Network identifier*" and enter the settings for the encryption.



CMS-I-00001151



NOTE

Settings for the encryption:

- 1 - 255 corresponds to "On"
- 0 corresponds to "Off"

8. Select "*Link protocol*" to receive a transmission protocol for radio data.



CMS-I-00001149

9. Tap on "*Modulation*" and select the type for the utilised modulation. Request the data from the base station provider.



CMS-I-00001148

10. Select the "*Forward error correction*". The forward error correction serves to control errors in the data transmission when the reception signal is insufficient. Activate or deactivate the forward error correction



CMS-I-00001150

or

Synchronising the base station


NOTE

If RTK is selected as the correction source, the settings for the base station can be automatically synchronised with the receiver.

11. In the Setup menu, tap on "System" > "GPS" > "RTK".




CMS-I-00001143

12. To configure the correction source, the modem must be detected. Press  and follow the instructions on the display.

or

Alternatively, you can cancel the procedure with



13. Confirm the detection of the modem with .

RTK NTRIP configuration




CMS-T-00001962-B.1

Communication with RTK NTRIP takes place through the mobile network. The RTK NTRIP correction source provides high position accuracy when the required data from the mobile phone provider has been entered. This can be accomplished with internal and external modems.

1. In the Setup menu, tap on "System" > "GPS" > "NTRIP".



CMS-I-00001155

2. When NTRIP is selected, a Setup assistant is started to detect the connected modem. Press  to start the procedure.
3. The procedure can be cancelled at any time with .
4. When the procedure is complete, the modem has been detected, confirm with .

5. *To configure the GSM modem correction signal, enter several data from the mobile phone provider.*

6. Enter the "GSM PIN".



CMS-I-00001159

7. Enter the "GSM user name".



CMS-I-00001153

8. Enter the "GSM password".



CMS-I-00001163

9. Enter the "GSM-APN Internet" access data.



CMS-I-00001162

10. Enter the "MTU (maximum transmission unit)".



CMS-I-00001161

11. Activate or deactivate *"Mobile roaming"*.



CMS-I-00001157

or

deactivate.

12. Activate or deactivate *"Allow 3G"*.



CMS-I-00001160

or

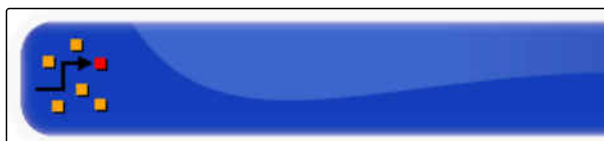
deactivate.

13. To configure the RTK NTRIP correction signal, data from the RTK signal provider is required. Tap on *"NTRIP address"* and enter the IP address and port number.



CMS-I-00001156

14. Tap on *"NTRIP mount point"* and enter the mountpoint.



CMS-I-00001154

15. Tap on *"NTRIP user name"* and enter the user name.



CMS-I-00001153

16. Tap on *"NTRIP password"* and enter the password.



CMS-I-00001163

Configuring RTK NTRIP with AM53

CMS-T-00002270-A.1

The RTK NTRIP correction source with AM53 provides high position accuracy. This can be accomplished with internal and external modems.

1. In the Setup menu, tap on "System" > "GPS" > "NTRIP".



CMS-I-00001155

2. When NTRIP is selected, a Setup assistant is started to detect the connected modem. Press



to start the procedure.

3. The procedure can be cancelled at any time with



4. When the procedure is complete, the modem has been detected, confirm with



5. *To configure the RTK NTRIP correction signal with AM53, data from the RTK signal provider is required.*

Tap on "NTRIP address" and enter the IP address and port number.



CMS-I-00001156

6. Tap on "NTRIP mount point" and enter the mountpoint.



CMS-I-00001154

7. Tap on "NTRIP user name" and enter the user name.



CMS-I-00001153






8. Tap on "NTRIP password" and enter the password.



CMS-I-00001163

NOTE

When the modem is being configured, the LED lights show the status of the connection.

LED lights		Status of the modem connection
None		Modem is switched off
after 3 seconds	 1st LED lights up green	Modem is started
after 6 seconds	 2nd LED lights up red	Connection is being established, please wait
after 35 seconds	 4th LED is slowly flashing red	Dial-in is taking place
after 45 seconds	 4th LED is rapidly flashing red	Dial-in is continued
after 60 seconds	 4th LED lights up continuously red	Modem is connected

9. Check the modem connection based on the LED lights.

6.3.3 Configuring the GPS output

CMS-T-001245-A.1

With the GPS output, data such as the speed, direction of travel and position can be transmitted to other devices.



NOTE

The configuration of the GPS output depends on the connected auxiliary devices. More information is available in the operating manual for the auxiliary device.

6.3.4 Configuring the serial ports

CMS-T-00000392-C.1

6.3.4.1 Defining the COM port for the GPS receiver

CMS-T-001149-C.1

Selection of the COM port for the GPS receiver.

1. In the setup menu, tap on "System" > "GPS" > "Output".



CMS-I-002498

2. Select "GPS receiver COM".



CMS-I-000843

3. Select the COM port.

Defining the COM port for the GPS output

CMS-T-001193-C.1

Define the COM port for the GPS output.

i NOTE

This COM port is available, depending on the wiring harness.

1. In the setup menu, tap on "System" > "GPS" > "Output".



CMS-I-002498

2. Select "GPS output COM".



CMS-I-000721

3. Select the COM port.

i NOTE

Setting for supplied AMAZONE wiring harness:

None

6.3.5 Setting the alarms

CMS-T-00000394-A.1

6.3.5.1 Configuring general alarms

CMS-T-000324-B.1

1. In the Setup menu, tap on "System" > "Alarms" > "General".



2. Select the alarm from the alarm list.

Alarm Name	
All General Alarms	
✓	End Of Row
✓	Steering Disengage (Visual)
✓	Steering Engage (Visual)
✓	Steering Unable To Engage
✓	GPS Receiver Firmware Mismatch
✓	ASC10 ECU Firmware Mismatch
✓	UT High Priority
✓	UT Medium Priority
✓	UT Low Priority
✓	Fallback

3. Tap on "Alarm state".



4. Enable the alarm

or

disable.

i NOTE

Disabled alarms are not displayed. There is no notification in case of malfunction.

i NOTE

Only the visual display can be disabled for the alarms for switching the automatic steering on and off. A warning tone is always issued when the automatic steering is switched on or off.

Configuring the end of row alarm

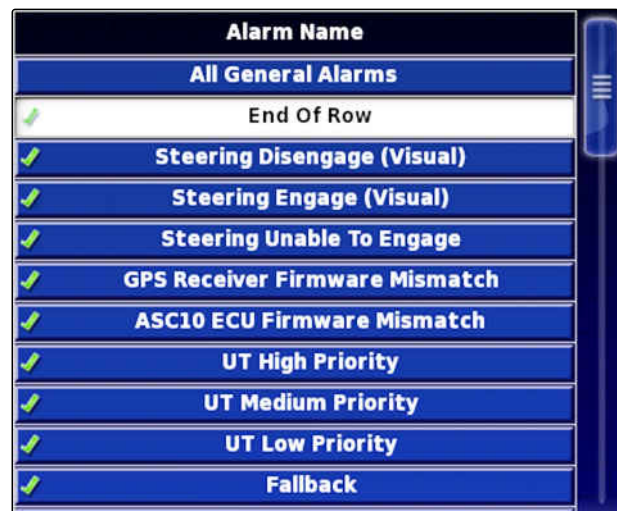
CMS-T-001183-B.1

When the vehicle approaches the boundary line, an alarm can be issued at a certain distance from the boundary.

1. In the Setup menu, tap on "System" > "Alarms" > "General".



2. In the alarm list, select "End of row".



3. Tap on "Alarm state".



4. Enable the alarm.

5. Tap on "First distance".



6. Enter the distance from the boundary line at which the first alarm should be issued.

7. Tap on "Second distance".



8. Enter the distance from the boundary line at which the second alarm should be issued.

9. Tap on "Look ahead distance".



10. Enter the additional distance from the first and second distances at which the alarm should be triggered.

6.3.6 Configuring the flag points

CMS-T-000341-B.1

In this menu, the pre-settings for the flag points can be entered. Flag points can be used to mark hazard points. Furthermore, the flag points also serve as a reference for manual GPS correction.

REQUIREMENTS


- ✓ User access level has been set to "Standard" or "Expert"; see page 38

1. In the setup menu, tap on "System" > "Flag points".



2. Select one of the flag points.



3. Select the symbol.
4. Tap on "Flag point name".
5. Enter the name.
6. Confirm with .

6.3.7 Configuring the camera

CMS-T-00001998-A.1

Images from connected digital cameras can be shown on the AmaPad. Settings for the cameras can be made in this menu.

✓ REQUIREMENTS

- ✓ A license and additional hardware must be purchased for this function.

1. In the Setup menu, tap on "System" > "Cameras" > "General".



CMS-I-00001177

The following camera settings are possible:

General:

- **1** "Name": Enter the name of the camera.
- **2** "Colour code"
- **3** "Version of the AGCAM interface box"
- **4** "Camera visible": Activate or hide the camera view
- **5** "Camera loop": Activate or deactivate the camera loop



CMS-I-00001175

2. Enter the required settings.

3. In the Setup menu, tap on "System" > "Cameras" > "General".



CMS-I-00001177

Default values:

- **1** "Long camera loop": Interval entry in seconds for changing between the connected cameras
- **2** "Thumbnail image frequency"
- **3** "Default colour code"
- **4** "Camera ribbon" Activate or deactivate representation of the cameras underneath the map view



CMS-I-00001173

4. Enter the required settings.

6.3.8 Configuring the ISOBUS

CMS-T-00000031-B.1

6.3.8.1 Configuring the Universal Terminal

CMS-T-00000395-B.1

Enabling the Universal Terminal

1. In the setup menu, tap on "System" > "ISOBUS"> "UT".



CMS-T-001209-B.1

CMS-I-002462

2. Select "Universal Terminal".



CMS-I-000826

Possible settings:

- Offline: The connection to the Universal Terminal is deactivated. The implement cannot login on the terminal.
- Online: The Universal Terminal is activated. The implement can login and be displayed.

Defining the UT number

CMS-T-001221-B.1

If several terminals are connected to an ECU, the Universal Terminal is clearly identified by the UT number.

NOTE

Terminals must be assigned through the Universal Terminal. If only one terminal is connected, this terminal is automatically assigned.

NOTE

There should not be multiple terminals with the same UT number connected to the ISOBUS. If other terminals with the same UT number are connected to the ECU, the AmaPad automatically switches the "Universal Terminal" setting to "offline".

1. In the setup menu, tap on "System" > "ISOBUS" > "UT".



2. Tap on "UT number".



Possible settings:

- Number between 1 and 32

Deleting the pool cache of the Universal Terminal

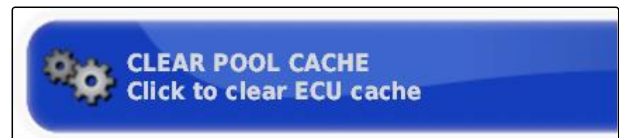
CMS-T-00000014-A.1


If there are display errors on the Universal Terminal, the pool cache of the Universal Terminal can be deleted.

1. In the setup menu, tap on "System" > "ISOBUS" > "UT".



2. Tap on "Delete pool cache".



3. Confirm with .

4. Restart the AmaPad.

Defining the soft keys per column

CMS-T-001233-A.1

Setting for how many soft keys are displayed in each column on the Universal Terminal.

1. In the setup menu, tap on "System" > "ISOBUS" > "UT".



2. Tap on "Soft keys per column".



3. Select the number.



NOTE

Recommended setting:

6

Defining the location of the soft keys

CMS-T-001165-A.1

Location of the soft keys on the Universal Terminal.

1. In the setup menu, tap on "System" > "ISOBUS" > "UT".



2. Tap on "Soft key location".



3. Select the location.



NOTE

Recommended setting:

On the right (two columns)

6.3.8.2 Configuring the Task Controller

CMS-T-00000396-A.1

Defining the TC version

CMS-T-006672-B.1

The TC version is the software version for the ECU. The different TC versions support different forms of documentation for job data.



NOTE

The AmaPad normally automatically detects the TC version.

To define the TC version, the following applies:

- AMAZONE implements: TC version 3
- For Peer Control: TC version 4

1. Select *"Setup menu" > "System" > "ISOBUS" > "TC"*.



2. Tap on *"TC version"*.



3. Select the TC version.

Defining the TC number

CMS-T-003859-B.1

If several terminals are connected to an implement, the AmaPad can be uniquely identified by the TC number. Each terminal needs a different TC number to avoid conflicts.

1. Select *"Setup menu" > "System" > "ISOBUS" > "TC"*.



2. Tap on *"TC number"*.



3. Enter the TC number.

Defining the control mode for manual part-width section control

CMS-T-006670-A.1

If automatic part-width section control is disabled, the part-width sections can still be controlled manually. This setting defines whether the part-width section can be controlled using the virtual part-width section switch.

1. Select "Setup menu" > "System" > "ISOBUS" > "TC".



2. Tap on "Manual control mode for part-width section control".



Possible settings:

- ECU-controlled: if automatic part-width section control is disabled, the part-width sections can no longer be controlled using the virtual part-width section switch.
- Console-controlled: if automatic part-width section control is disabled, the part-width sections can still be controlled using the virtual part-width section switch.

3. Select the control mode.

Deleting the pool cache of the Task Controller

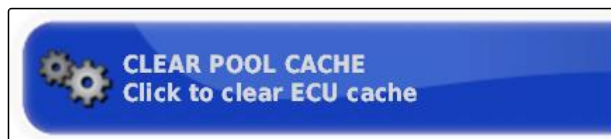
CMS-T-00000015-A.1


If there are errors in the display or transmission of the implement configuration, the pool cache of the Task Controller can be deleted.

1. In the Setup menu, tap on "System" > "ISOBUS" > "TC".



2. Tap on "Delete pool cache".



3. Confirm with .

4. Restart the AmaPad.

USB preparation for the upgrade

CMS-T-000231-D.1

The AmaPad software can be updated using a USB flash drive.



NOTE

This function should be performed by trained personnel.

1. Please contact AMAZONE customer service.
2. Insert the USB flash drive with the current software in the rear side of the terminal.
3. In the setup menu, tap on "System" > "Aids".



CMS-I-002517

4. Select "USB preparation for the upgrade".



CMS-I-001387



NOTE

Installation starts automatically!

If the software is not updated automatically, restart the terminal.

6.4

Configuring a vehicle

CMS-T-00000397-C.1

6.4.1 Creating a new vehicle

CMS-T-00000398-C.1

6.4.1.1 Selecting a vehicle from the database

CMS-T-000268-C.1

The AmaPad has a database with vehicles. The desired vehicle can be selected from this database.



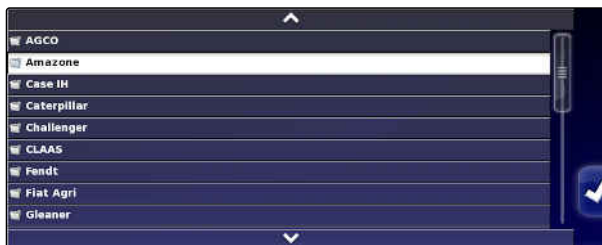
NOTE

If the desired vehicle is not in the database, a custom vehicle can be created; see page 86.

1. In the setup menu, tap on "Vehicle" > "New".

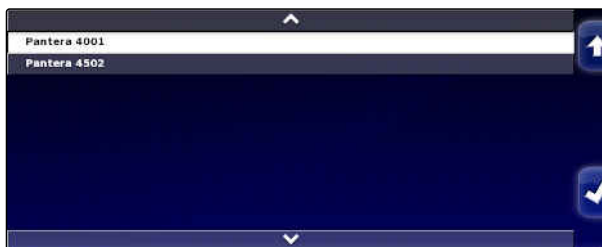


2. Select the desired manufacturer from the manufacturer list.



➔ A list with vehicle models will be shown.

3. Select the desired vehicle model.



4. Confirm the selection of the model with .

➔ For some vehicle models, the AmaPad must be restarted.

5. Confirm restart with .

➔ The vehicle geometry menu will be shown. To define the vehicle geometry, see page 87.

NOTE

For the AMAZONE Pantera self-propelled sprayer, the implement must be configured at this point; see page 99, "Create new implement", Step 7.


6.4.1.2 Creating a custom vehicle

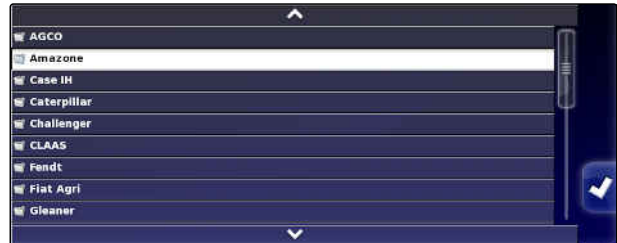
If the desired vehicle is not in the database, a custom vehicle can be created.

CMS-T-000272-D.1

1. In the setup menu, tap on "Vehicle" > "New".



2. Select "Other" in the manufacturer list.
3. Select the steering controller of the vehicle.
4. Confirm the selection of the steering controller with .
5. Select the vehicle type.



- ➔ For some vehicle models, the AmaPad must be restarted.


6. Confirm restart with .

7. Tap on "Vehicle name".

NOTE

Sensible vehicle names should be assigned to make it easier to manage the vehicles.

8. Enter the vehicle name.

9. Confirm the entry with .

- ➔ The vehicle geometry menu will be shown. To define the vehicle geometry, see page 87.

6.4.1.3 Defining the vehicle geometry

CMS-T-000276-D.1

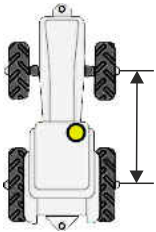
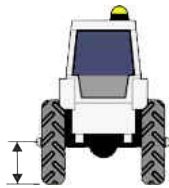

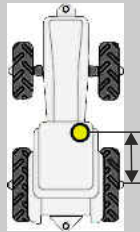
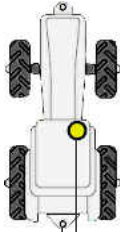
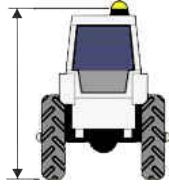
NOTE

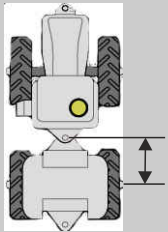
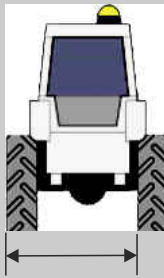
The vehicle geometry is required for precise functioning of the track guidance system. Measure the vehicle precisely. The tolerance is of 5 cm.



NOTE

The adjustable geometry values depend on the vehicle selection. The name of the selected geometry value is shown in the title bar of the menu. The following list contains all of the geometry values.

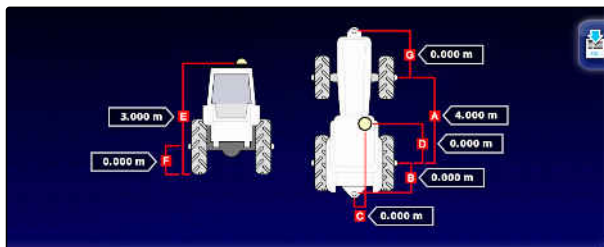
Geometry value	Description	Figure		Geometry value	Description	Figure
Axle distance	Distance from the centre of the front axle to the centre of the rear axle.			Axle height	Distance from the axle to the ground.	
Implement force transmission point	Distance from the centre of the rear axle to the pulling point.			GPS antenna	Forward offset of the GPS receiver to the rear axle Positive value: Receiver is installed in front of the rear axle. Negative value: Receiver is installed behind the rear axle.	
GPS steering	Right offset of the GPS receiver to the centre of the axle Positive value: Receiver is installed to the right of the centre of the axle. Negative value: Receiver is installed to the left of the centre of the axle.			GPS height	Distance from the ground to the upper side of the GPS receiver	

Geometry value	Description	Figure		Geometry value	Description	Figure
Pivot point	Only for articulated vehicles. Distance between the rear axle and the pivot point.			Track spacing	Only for caterpillar tractors. Distance between the left edge of the left caterpillar track and the left edge of the right caterpillar track.	

1. In the setup menu, tap on "Vehicle" > "Geometry".




2. Check the name of the selected vehicle.
3. *If the wrong vehicle has been selected, see page 90.*
4. *To change a geometry value:*
Select **0.000 m**.



- ➔ The name of the selected geometry value is shown on the title bar.

5. Enter the value.

6. Confirm with .

6.4.2 Selecting a vehicle


CMS-T-000476-C.1

In this menu, configured vehicles can be selected. In addition, vehicle data can be imported from a USB stick and copies of the vehicle data can be made. In this way, the vehicle data can be imported onto other terminals.

1. In the setup menu, tap on "Vehicle" > "Select".



2. Select a vehicle from the list.

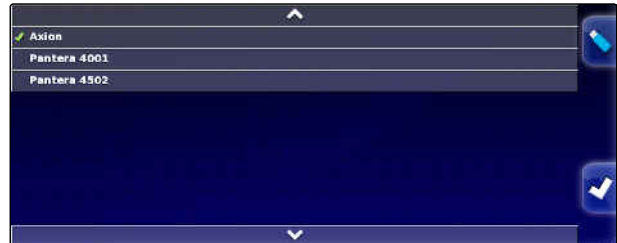
3. Confirm selection with .

➔ A restart must be performed for some vehicles.

4. Confirm restart with .

➔ The "Vehicle geometry" menu will be shown.

5. To change the vehicle geometry,
see page 90.



6.4.3 Importing vehicle data

CMS-T-000472-C.1


Vehicle data that was saved to a USB flash drive using the inventory manager can be imported again.

NOTE

For more information on the inventory manager, see page 229.


1. In the setup menu, tap on "Vehicle" > "Select".



2. Tap on .

3. Select a vehicle from the list.



4. Confirm selection with .

➔ A restart must be performed for some vehicles.

5. Confirm restart with .

➔ The "Vehicle geometry" menu will be shown.


6.4.4 Copying vehicle data

CMS-T-000468-B.1

Vehicle data can be copied to create vehicles that only differ slightly.


1. In the setup menu, tap on "Vehicle" > "Select".

2. Select a vehicle from the list.

3. Confirm selection with .


➔ A restart must be performed for some vehicles.

4. Confirm restart with .

5. Tap on .

6. Select the "Vehicle name".

7. Enter the vehicle name for the copy.

8. Confirm the entry with .

➔ For some vehicles, a restart will be performed.



6.4.5 Configuring the steering controller

CMS-T-00000400-C.1

6.4.5.1 Selecting the controller

CMS-T-001289-C.1

With this setting, the steering controller of the vehicle on which the AmaPad is installed is selected.



NOTE

The steering control settings are not assigned to the selected vehicle. If a different vehicle is selected, the steering control must be adjusted.



REQUIREMENTS

- ✓ User access level has been set to "Standard" or "Expert", see page 38
- ✓ Automatic steering is enabled; see page 43

1. In the setup menu, tap on "Vehicle" > "Steering".



2. Tap on "Controller".



Possible settings:

- Automatic detection: Only for steering controllers that are not included in the selection list.
- AES-25
- Fendt FSC
- Case 8800
- Lexion (USA)



NOTE

The "Auto detect" setting does not revoke the selection of the proper steering controller.

Selecting the CAN bus

CMS-T-001322-C.1

The steering control can take place through different CAN buses.



NOTE

The steering control settings are not assigned to the selected vehicle. If a different vehicle is selected, the steering control must be adjusted.



REQUIREMENTS

- ✓ User access level has been set to "Standard" or "Expert", see page 38
- ✓ Automatic steering is enabled; see page 43

1. In the setup menu, tap on "Vehicle" > "Steering".



2. Tap on "CAN bus".



Possible settings:

- CAN 1: ISOBUS
- CAN 2: Primary communication bus for the steering system



NOTE

The CAN bus that should be used is written on the GPS receiver.

- CAN bus for AGI-3 and AGI-4: CAN 2

Switching on the automatic steering

CMS-T-001285-C.1



NOTE

The steering control settings are not assigned to the selected vehicle. If a different vehicle is selected, the steering control must be adjusted.



REQUIREMENTS

- ✓ User access level has been set to "Standard" or "Expert"; see page 38
- ✓ Automatic steering is enabled; see page 43



1. In the setup menu, tap on "Vehicle" > "Steering".



2. Tap on "Steering engage".



Possible settings:

- Virtual: Automatic steering can only be switched on using the  button in the operating menu.
- Virtual and external console input: Automatic steering can be switched on using the  button in the operating menu and using an external switch.

Enabling the direct spool

CMS-T-001326-C.1



NOTE

The steering control settings are not assigned to the selected vehicle. If a different vehicle is selected, the steering control must be adjusted.



REQUIREMENTS

- ✓ User access level has been set to "Standard" or "Expert", see page 38
- ✓ Automatic steering is enabled; see page 43

1. In the setup menu, tap on "Vehicle" > "Steering".



2. Tap on "Direct spool".



Possible settings:

- Disabled: The steering controller works with a steering angle sensor.
- Enabled: The steering controller works without a steering angle sensor.

6.5

Configuring an implement

CMS-T-00000399-E.1

6.5.1 Using the implement detection assistant

CMS-T-002255-C.1

The AmaPad automatically detects connected ISOBUS implements and opens an assistant. This assistant can be used to create an implement profile.



NOTE

The AmaPad only automatically detects ISOBUS implements.

When the AmaPad is started, the implement detection assistant is shown in the Operating menu.



NOTE

The AmaPad requires up to 2 minutes to detect the implement.

✓ REQUIREMENTS

- ✓ Implement is properly connected; see page 6

1. *If a profile should be created for the implement, confirm with "Yes".*

i NOTE

Other options:

- "No": An implement profile will not be created. The AmaPad saves this selection and no longer opens the assistant for this implement.
- "Cancel": An implement profile will not be created. The AmaPad will reopen the assistant when the implement is connected again.



CMS-I-001226

2. Select the implement type.

i NOTE


Implement types from left to right and from top to bottom:

- Rigid
- Towed
- Front-mounted
- With two pivot points
- Self-propelled



CMS-I-002630


3. If the implement type "Self-propelled" was selected,
select a vehicle type from the list.

4. Continue with .



CMS-I-001229

5. If the name for the implement should be changed,
select "Profile name" and enter the name.

6. Continue with .

➔ The implement profile has been created.

7. Confirm with .



NOTE

Please observe the instructions on the display.

8. If the implement should be loaded,
confirm with .



CMS-I-001231

6.5.2 Creating a new work implement

CMS-T-000313-C.1



NOTE

This operating manual only describes implements with ISOBUS. For more information, please contact AMAZONE.



REQUIREMENTS

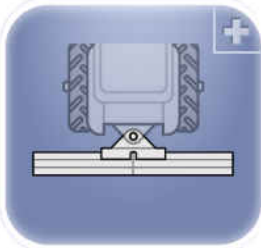

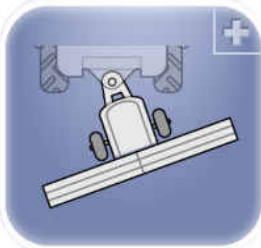
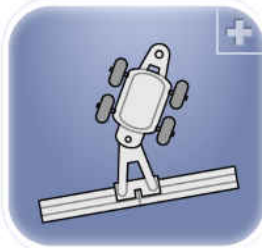
- ✓ Implement is properly connected

1. In the setup menu, tap on *"Implement"* > *"New"* > *"Custom"*.



CMS-I-001621

➔ Four implement types are displayed.

Implement type	Button	Implement type	Button
Rigid	 CMS-I-002576	Front-mounted implement	 CMS-I-002584
Towed	 CMS-I-002580	2 pivot points	 CMS-I-002582

2. Select the desired implement type.

➔ The AmaPad has to be restarted after the implement has been created.

3. Confirm restart with .


4. Tap on *"Implement name"*.



NOTE

Sensible implement names should be assigned to make it easier to manage the implements.

5. Enter the name.

6. Confirm the entry with .

➔ The implement setup assistant will be shown.

7. In Step 1, select "*Part-width section control and rate control*" under "*Implement control*".

8. In Step 2, select "*ISOBUS*" under "*ECU type*".

9. In Step 3, select the type of the connected implement under "*Implement function*".

10. In Step 4, select the connected implement from the list under "*ECU assignment*".



CMS-I-001067



TROUBLESHOOTING

The connected implement is not shown?

The AmaPad did not recognise the connected implement.

1. Check the connections.
2. Repeat the process, see page 99.

6.5.3 Selecting the implement


CMS-T-000491-C.1

In this menu, configured implements can be selected. In addition, implement data can be imported from a USB stick and copies of the implement data can be made.

1. In the setup menu, tap on "*Implement*" > "*Select*".



2. Select implement from the list.

3. Confirm selection with .

➔ A restart must be performed for some implements.

4. Confirm restart with .

6.5.4 Importing implement data


CMS-T-000487-C.1

Implement data can be saved to a USB flash drive and imported onto the AmaPad.

1. In the setup menu, tap on "Implement" > "Select".



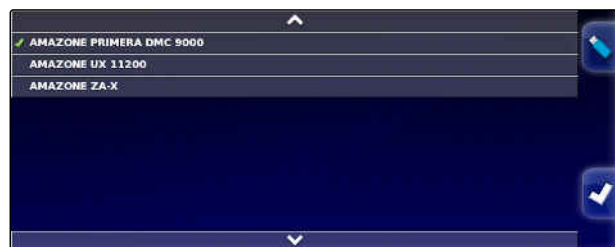
2. Insert the USB flash drive with the implement data into the AmaPad.

3. select .

4. Confirm selection with .

➔ A restart must be performed for some implements.

5. Confirm restart with .



6.5.5 ECU configuration

CMS-T-00000401-B.1

Selecting the implement control

CMS-T-000882-B.1

1. In the setup menu, tap on *"Implement"* > *"ECU"*.



2. Tap on *"Implement control"*.



Possible settings:

- Only section control
- Section control with rate control
- Only rate control

Selecting the implement function

CMS-T-000899-B.1

1. In the setup menu, tap on *"Implement"* > *"ECU"*.



2. Tap on *"Implement function"*.



Possible settings:

- Sprayer
- Spreader
- Precision airplanter

Refreshing the ECU settings

CMS-T-000878-C.1

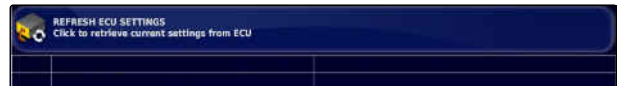
The geometry data can be transmitted from the ECU of the selected implement to the AmaPad. If the geometry data of the implement has been changed


using the Universal Terminal, this function must be used.

1. In the setup menu, tap on *"Implement"* > *"ECU"*.



2. Tap on *"Refresh ECU settings"*.



3. Confirm with .

NOTE
The data transmission takes up to 60 seconds.

6.5.6 Overlap, setting

CMS-T-001094-B.1

Overlap can be used to influence the track line spacing for track guidance. When the vehicle is following the track lines, the implement protrudes into the already worked area by the defined value.


NOTE
This setting does not affect the overlap of the automatic part-width section control.

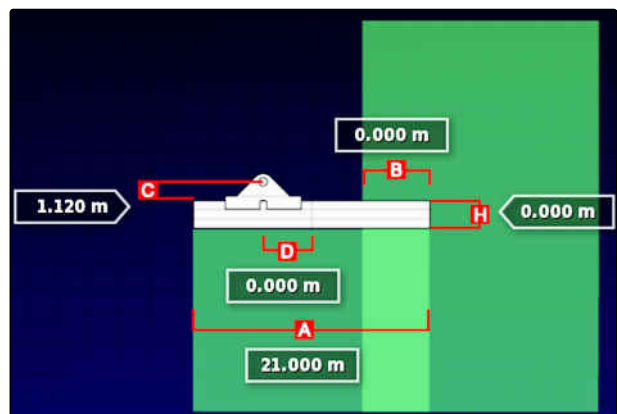
1. In the setup menu, tap on *"Implement"* > *"Geometry"*.



2. Select geometry value *"B"*.

3. Enter the value.

4. Confirm with .



6.5.7 Configuring the part-width section control

CMS-T-00000402-A.1

6.5.7.1 Configuring part-width section control for field sprayers

CMS-T-00000403-A.1

Configuring the part-width sections

CMS-T-001357-B.1

In this menu, the part-width sections can be configured.

i NOTE

For ISOBUS implements, the configuration of the part-width sections is performed only through the Universal Terminal.

- For information on the configuration of part-width sections for non-ISOBUS implements, please contact AMAZONE.



Configuring the tact

CMS-T-000923-B.1

In this menu, the on/off point delays for switching the individual part-width sections are set. The part-width sections can also all be set together to the same on/off point delay on the "All" line.

i NOTE

For ISOBUS implements, the configuration of the on/off point delays is performed only through the Universal Terminal.

- For information on the configuration of on/off point delays for non-ISOBUS implements, please contact AMAZONE.



Configuring the virtual section switch

CMS-T-000894-A.1

The virtual section switches can be included on the function bar in the operating menu and in the job view.

1. In the setup menu, tap on "Implement" > "Section control" > "Section switch".



2. Tap on "Type".



3. Choose "Virtual" in the selection list.

4. Confirm with .

5. Tap on "Switches".



6. Enter the desired number.

NOTE

A maximum of 16 section switches can be activated.

7. In the "Switch" table, assign each section to a switch.

NOTE

Multiple part-width sections can be actuated with the same section switch. To do so, the part-width sections must be assigned to the same section switch.

Section	Switch
1	1
2	2
3	3
4	4
5	5
6	6

6.5.7.2 Configuring section control for fertiliser spreaders

CMS-T-00000404-A.1

Configuring the tact

In this menu, the on/off point delays for switching the individual part-width sections are set.

CMS-T-000907-B.1

NOTE

For ISOBUS implements, the configuration of the on/off point delays is performed only through the Universal Terminal.



- For information on the configuration of on/off point delays for non-ISOBUS implements, please contact AMAZONE.

Enabling virtual section switches

CMS-T-000932-A.1



NOTE

This function is not available for fertiliser spreaders.



6.5.7.3 Configuring section control for seed drills

CMS-T-00000405-A.1

Configuring the part-width sections

In this menu, the part-width sections can be configured.



NOTE

For ISOBUS implements, the configuration of the part-width sections is performed only through the Universal Terminal.

- For information on the configuration of part-width sections for non-ISOBUS implements, please contact AMAZONE.



CMS-T-000890-B.1

Configuring the tact

In this menu, the on/off point delays for switching the individual part-width sections are set. The part-width sections can also all be set together to the same on/off point delay on the "All" line.



NOTE

For ISOBUS implements, the configuration of the on/off point delays is performed only through the Universal Terminal.

- For information on the configuration of on/off point delays for non-ISOBUS implements, please contact AMAZONE.



CMS-T-001053-B.1

Configuring the virtual section switch

CMS-T-001342-A.1


The virtual section switches can be included on the function bar in the operating menu and in the job view.



1. Select "Setup menu" > "Implement" > "Section control" > "Section switch".
2. Tap on "Type".



3. Choose "Virtual" in the selection list.

4. Confirm with .

5. Tap on "Switches".



6. Enter the desired number.



NOTE

A maximum of 16 section switches can be activated.

7. In the "Switch" table, assign each section to a switch.



NOTE

Multiple part-width sections can be actuated with the same section switch. To do so, the part-width sections must be assigned to the same section switch.

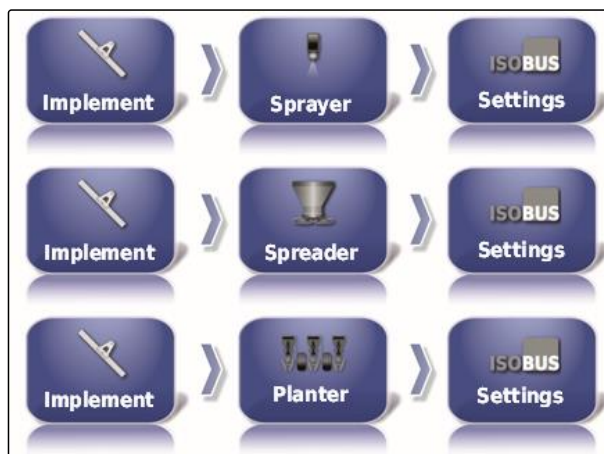
Section	Switch
1	1
2	2
3	3
4	4
5	5
6	6

6.5.8 Defining the lower limit for the working speed

CMS-T-001334-A.1

In this menu, the speed at which the implement starts the application can be defined.

1. In the setup menu, tap on *"Implement" > "Sprayer (spreader, precision airplanter) > "ISOBUS settings"*.



2. Tap on *"Switch off at low speed"*.



3. Enter the speed.

i NOTE

This function is disabled when the speed is set to 0 km/h. The application will not be stopped when the vehicle comes to a standstill.

6.5.9 Configuring audio signals

CMS-T-001361-B.1

The AmaPad can issue acoustic signals for specific implement functions.

- Audio signal for main switch: when the audio signal is enabled, a tone is issued when the main switch is actuated.
- Audio signal for tank switch: when the audio signal is enabled, a tone is issued when the tank switch is actuated.
- Audio signal for part-width sections: when the audio signal is enabled, a tone is issued when the part-width sections are switched on or off.

i NOTE

The following audio signals are not supported by ISOBUS implements:

- Audio signal for the tank switch
- Audio signal for the main switch

1. In the setup menu, tap on *"Implement" > "Sprayer (Spreader, Planter) " > "Audio"*.
2. Tap on the button for the desired audio signal.



3. Enable the audio signal

or

disable.

6.5.10 Configuring the GPS speed simulation

CMS-T-000928-D.1

In this menu, it can be defined that the AmaPad should determine the speed using the GPS signal, and like the AmaPad, transmit the speed to the implement.



NOTE

The speed must only be transmitted to the implement when there is no speed source available to the Universal Terminal. In this case, both speed simulations can be enabled. One of the sources can then be selected through the Universal Terminal.

1. In the setup menu, tap on *"Implement" > "Speed"*.



When the ISO ground speed is enabled, the speed is transmitted to the implement through the ISOBUS protocol.

2. Tap on *"ISO ground speed"*.



3. Enable the speed simulation

or

disable.

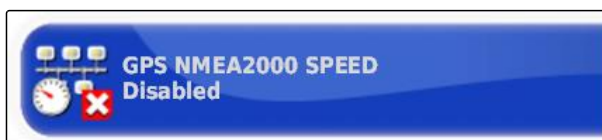
When the GPS NMEA2000 speed is enabled, the speed is transmitted to the implement through the GPS NMEA2000 protocol.



NOTE

The GPS NMEA2000 protocol can be enabled if the tractor sends a signal, but the GPS speed signal should still be used.

4. Tap on *"GPS NMEA2000 speed"*.



5. Enable the speed simulation

or

disable.

6.5.11 Enabling the GPS NMEA2000 position

CMS-T-00000013-B.1

When this function is enabled, the position is transmitted to the implement through the GPS NMEA2000 protocol.



NOTE

The GPS NMEA2000 protocol can be enabled to transmit the GPS signal through the CAN bus.

1. In the setup menu, tap on *"Implement"* > *"Speed"*.



2. Tap on *"GPS NMEA2000 position"*.



3. Enable the function

or

disable.

Using the operating menu

7

CMS-T-00000488-C.1

7.1

Using the function menu

CMS-T-00000489-B.1

7.1.1 Opening a miniature view

CMS-T-00000492-A.1

- Open the miniature views with the buttons in the function menu.




7.1.2 Maximising the miniature view

CMS-T-00000491-A.1



NOTE


Not all miniature views can be maximised.
Miniature views that can be maximised have this
button at the top right corner: 



NOTE

The maximised miniature view cannot be
minimised again. To close the maximised
miniature view, a different miniature view must be
maximised.

To maximise miniature views, there are 2 options:

- Tap on 

or


Swipe over the screen horizontally to the right on the miniature view.

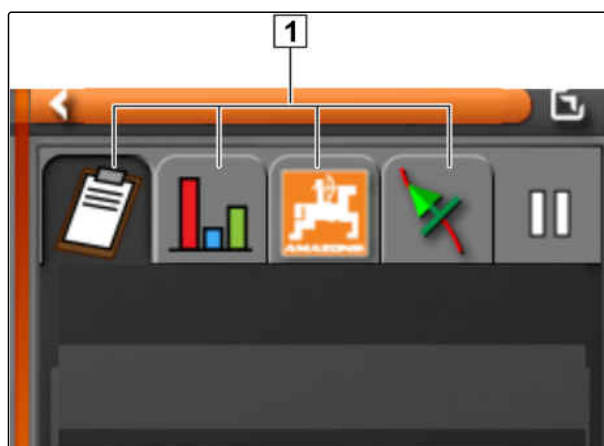


7.1.3 Using the tabs in the miniature view

CMS-T-000631-C.1

Several miniature views contain tabs that can be individually opened.

- Open the tabs with the buttons .



CMS-I-00002538


7.1.4 Closing a miniature view

CMS-T-00000490-A.1

To close the miniature view, there are 3 options:

- Tap again on the button for the opened miniature view

or

Tap on  at the top left of the miniature view

or

Swipe horizontally from the miniature view towards the function menu.




7.2

Using the map view

CMS-T-00000493-B.1

7.2.1 Calling up the map view

CMS-T-00000494-A.1

1. In the function menu, open the miniature view of the map view with .



2. enlarge the miniature view.



7.2.2 Enlarging or reducing the map




CMS-T-000628-A.1

- In the map view, enlarge  or reduce  the map section.

7.2.3 changing the perspective

CMS-T-000638-A.1

3 perspectives are available. The button changes depending on the set perspective.

Button	Description
	The upper edge of the map remains oriented to the north.
	The map is oriented in the direction of travel and turns along with the vehicle.
	The map is oriented in the direction of travel. An artificial horizon is shown.

- To change the perspective, tap on the button on the map until the desired perspective is set.


7.2.4 Panning the map

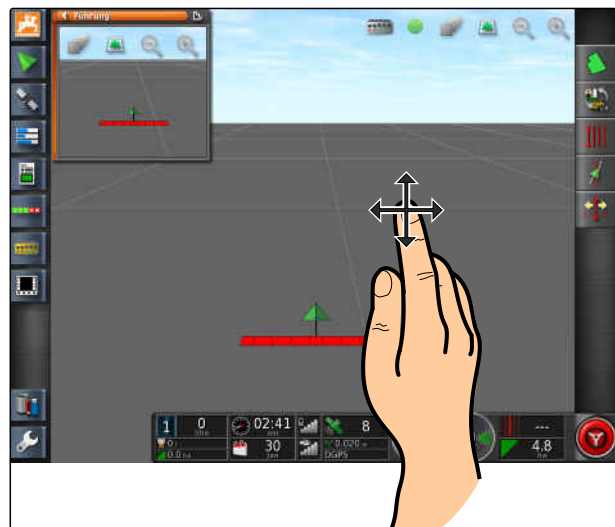
CMS-T-000651-B.1

To obtain a better overview, the map can be panned with your finger.



REQUIREMENTS



- ✓ Map panning is enabled; see page 36
1. Swipe with your finger over the map.
 - ➔ The symbol for vehicle focus turns green.
 2. When the vehicle symbol should be shown in the centre of the map again, focus on the vehicle symbol with .

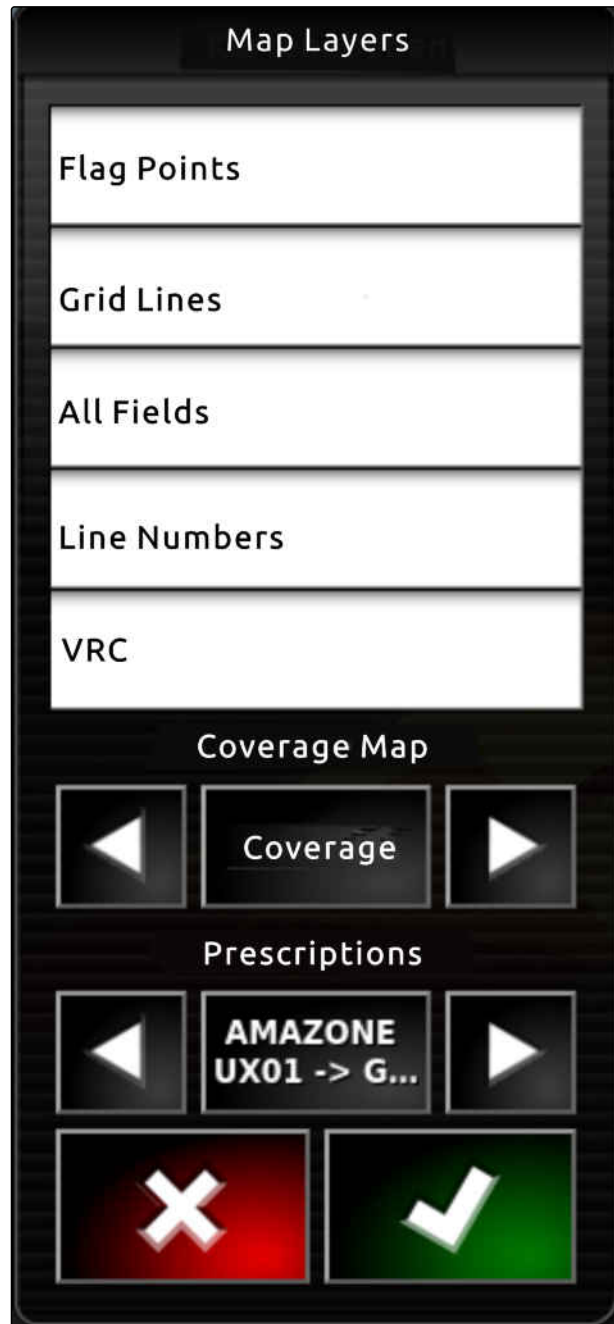


7.2.5 Selecting map layers

CMS-T-000648-B.1

Map layers are elements that are shown on the map.

1. Open the "Map layers" menu with .
 2. Select the desired elements from the list.
 3. Confirm with .
- ➔ The selected elements will be shown on the map.



7.3

Configuring the dashboard

CMS-T-00000444-B.1

7.3.1 Adding data fields

CMS-T-005024-B.1



REQUIREMENTS

- ✓ Function is enabled in user controls; see page 39

1. Tap on any data field on the dashboard.
→ The selection list for the data fields will be opened.



CMS-I-00001230

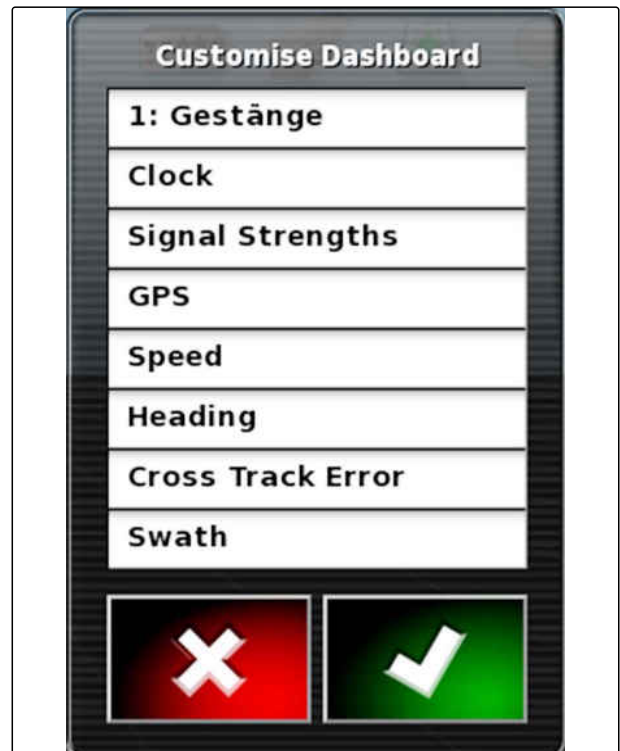
2. Select the desired data fields

3. Confirm with 



NOTE

A selected data field is activated or deactivated on the dashboard. A data field is automatically deactivated when the number of selected data fields has been exceeded.

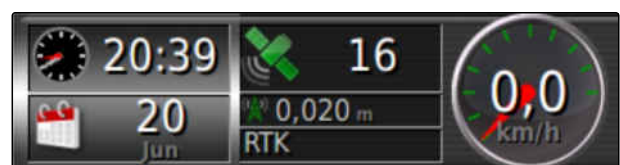


CMS-I-001065

7.3.2 Editing data fields

CMS-T-005022-B.1

1. Tap on any data field on the dashboard.
→ The selection list for the data fields will be opened.




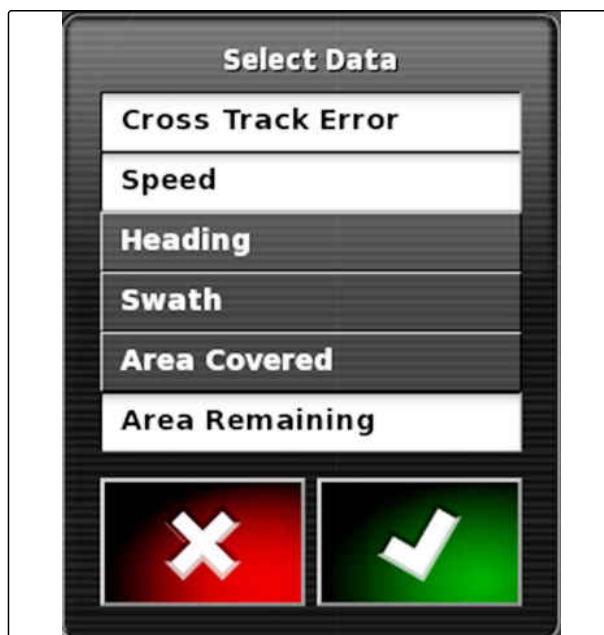
CMS-I-00001230

2. To edit an existing data field on the dashboard, tap on the desired data field on the dashboard.

➔ The selection list for the data will be opened.

3. Choose the desired data for the selected data field.

4. Confirm with .



CMS-I-001062

Working without a job

8

CMS-T-006709-E.1

If the job data should not be recorded, work can be performed without using a job. To do so, the *"Quick start"* function is used to automatically create a job, and delete it again when the function is called up again.



REQUIREMENTS

- ✓ User access level has been set to *"Standard"* or *"Expert"*; see page 38

1. In the setup menu, tap on *"System"* > *"Functions"* > *"Track guidance"*.




CMS-I-002493

2. Tap on *"Help with job processing"*.



CMS-I-002600

3. Select *"Quick start"*.

4. Confirm with .

5. In the setup menu, tap on *"System"* > *"Functions"* > *"Quick start"*.



CMS-I-002479

6. In the "Options" list, select "Change job".



CMS-I-001627

7. Enable the option with "Option status".



CMS-I-001630

8. Under "Measures", select "No job".

9. Enable the "Hide on success" option

10. Disable all of the other enabled options.

11. Return to the operating menu.

12. Select  in the job menu.

➔ A job will be automatically created. The job data will not be saved.

13. To work a different area,

select  again.

➔ All of the recorded data, such a field boundaries or obstacles, will be deleted.

NOTE

To save the job data, see page 121.



CMS-I-002391

Managing jobs

9

CMS-T-00000446-E.1

9.1

Using the job assistant

CMS-T-006658-D.1

The job assistant shows information on the menus in the map view. The information contains instructions on how to use the individual menus.



REQUIREMENTS

- ✓ The job assistant is enabled; see page 45

1. Select  in the job menu.

➔ The job assistant will be shown.

2. Select the desired menu in the job menu.

➔ The job assistant shown the information on the selected menu.

9.2

Using the quick start

CMS-T-006660-E.1

The quick start enables the automation of work procedures. In this way, repetitive settings do not need to be entered manually.



REQUIREMENTS

- ✓ Quick start is enabled; see page 45
- ✓ Quick start is configured; see page 52

► Select  in the job menu.

➔ The configured work procedure will be started.

9.3

Editing master data

CMS-T-006674-A.1

In the menus to select the master data, the master data can also be created, edited or deleted.

The master data includes the following data:

- Customer data
- Farm data
- Worker data
- Field data
- Product data
- Crop data
- Comment templates

► *To edit master data,*

Select .

or

To add new master data,

Select .

or

To delete master data,

Select .

Select: Customer

Customer 1	Summary
Customer 2	Customer
Customer 3	First Name
Customer 4	Street
	PO Box
	Postal Code
	City
	State
	Country
	Phone
	Mobile
	Fax Number
	Email

9.4

Starting a job


CMS-T-001561-D.1


When starting a job, the application will be started and the job data will be recorded.





REQUIREMENTS

- ✓ GPS receiver is connected
- ✓ GPS is configured; see page 57.
- ✓ Vehicle is configured; see page 85
- ✓ Implement is configured; see page 96
- ✓ Field is created; see page 136
- ✓ Job is created and the field is added to the job; see page 125

1. In the Job menu, tap on .

2. Start the job with .

➔ The  button changes into the  button.




TROUBLESHOOTING

The job cannot be started?

The conditions for starting the job have not been met. The "Start job status" window will be shown. A red status display means that these conditions have not been met.



CMS-I-001076





- ▶ *Red status display for the "GPS received":*
Check whether the GPS receiver is properly connected and selected.
- ▶ *Red status display for " Job selected ":*
Select the job.
- ▶ *Red status display for " Console ready ":*
Call up further information with  and rectify the displayed errors.
- ▶ *Red status display for " Implement loaded ":*
Select the implement.
- ▶ *Red status display for " Vehicle loaded ":*
Select the vehicle.
- ▶ *Red status display for " ECU synchronised ":*
Reconnect the implement.

9.5

Interrupting a job

CMS-T-001442-C.1

When the job is interrupted, the application is stopped and job data is no longer recorded.

1. In the Job menu, tap on .
 2. Interrupt the job with .
- ➔ The  button changes into the  button.

9.6

Creating a new job

CMS-T-000353-C.1



To edit a field, a job is required. When starting a job, the application will be started and the job total values will be recorded.

The job total values include the following data:

- Distance in working position
- Time in working position
- Worked area
- Applied quantity

REQUIREMENTS

- ✓ When boundary lines or tracks lines should be created, a field must be created.

1. In the Job menu, tap on .
2. Call up the "Create job" menu with .

- Enter a name for the job under "Name".

NOTE

Sensible names should be assigned to make it easier to manage the jobs.

The automatically generated name consists of the following elements:

- The word "Job"
- Date of creation
- Time of creation

NOTE

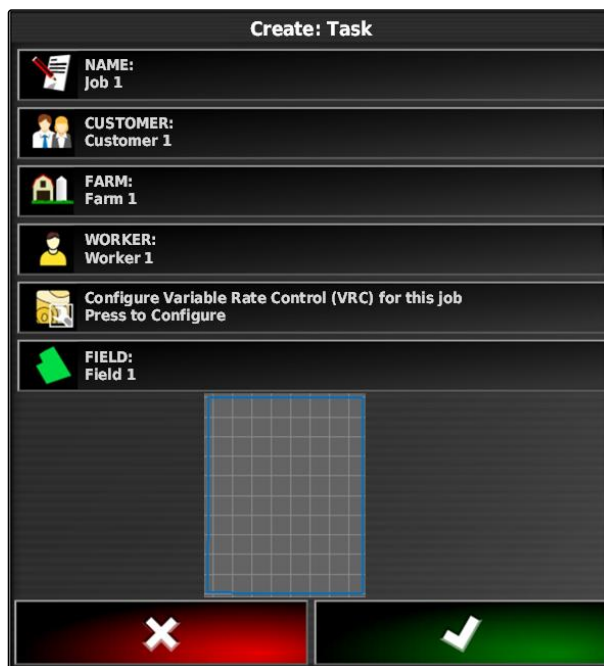
The following data belongs to the master data and is optional. To add the master data to the job, the master data can be selected from a list. If master data has not been created yet, see page 122.

- Under "Customer", indicate for whom the job is being processed.
- Under "Farm", indicate the farm for which the job is being processed.
- Under "Worker", indicate who is processing the job.
- Under "Field", select the field that will be worked.

➔ When a field has been selected, a preview of the field will be shown.

- Confirm entries with .

- If a rate control should be assigned to the job, see page 207.



CMS-I-002471

9.7

Importing job data

CMS-T-000400-C.1

Job data can be created with a Farm Management Information System on a PC. This job data can then be imported as a job data file ("TASKDATA.XML") onto the AmaPad using a USB flash drive.






NOTE

Only one "TASKDATA.XML" file can be imported. However, a "TASKDATA.XML" file can contain multiple job data.



NOTE

When the job data is imported, the existing jobs on the AmaPad will be deleted. To keep the existing jobs, they must be exported; see page 128.


1. Insert the USB flash drive with the "TASKDATA.XML" file into the AmaPad.
 2. In the job menu, tap on .
 3. Tap on .
 4. Tap on .
- ➔ The import menu will be opened and the content of the USB flash drive will be shown.
5. Select the folder containing the "TASKDATA.XML" files

or

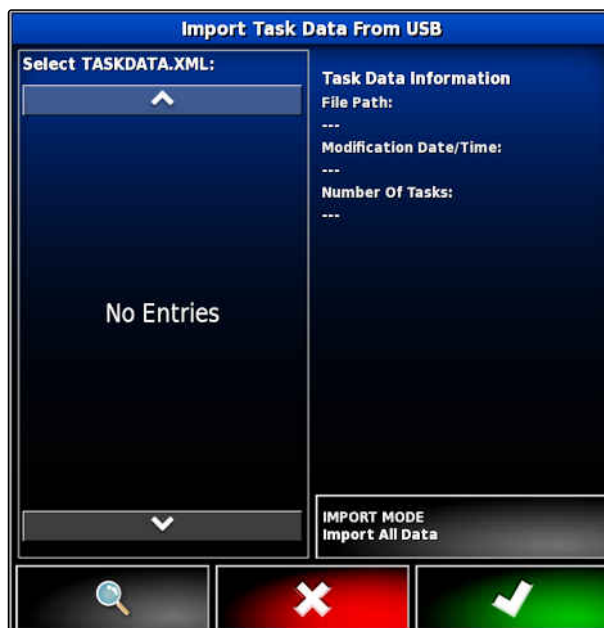
To show all "TASKDATA.XML" files on the USB flash drive,

tap on



6. Select the desired "TASKDATA.XML" file.
7. Under "Import mode", select whether all of the data or only master data should be imported.
8. Confirm selection with .
9. *If job data is on the AmaPad:* confirm overwriting.

➔ The job data will be imported.



9.8

Exporting task data

CMS-T-000396-C.1

Job data can be exported with a USB flash drive to manage it with a Farm Management Information System on a PC.




NOTE


The job data includes the following data:


- Vehicle data
- Implement data
- Working times
- Worked area
- Total application rate
- Field data
- Master data

When job data is exported, it will be deleted on the AmaPad. The inventory data and master data will be copied.

A job data backup will be created in the inventory manager. If the job data have been lost, see page 229.

1. Insert the USB flash drive into the AmaPad.
2. In the Job menu, tap on .

3. Tap on .

4. Tap on .

➔ The "Export job data" menu will be opened.

NOTE


In addition to the ISO-XML format, the file formats CSV and shape file can be selected.

5. Tap on "Export formats".



CMS-I-000926

6. *If other data formats are required, select the additional data formats.*

7. Confirm with .



CMS-I-001011



➔ The job data will be exported.

9.9

Selecting a job

CMS-T-000406-B.1

This menu can be used to select created or imported jobs to start them.

1. In the job menu, tap on .
2. Open the "Select job" menu with .

Menu overview:


"Filter": Filter jobs; see page 130.

"Sorting": Sort jobs; see page 131.

The found jobs can be chosen from this selection list.

"Overview": The overview shows the information on the selected job. In the bottom area, the boundary lines for the selected job are shown. Blue lines for work areas, red lines for exclusion areas, a green triangle for the vehicle position.

 : Edit job

 : Add new job;



3. Choose a job from the selection list.


4. Confirm selection with .

9.10

Filtering jobs

CMS-T-004590-A.1

The jobs can be filtered according to the master data. To do so, filters are added in the "Select jobs" menu. These filters can be individually edited.

1. Tap on "Filter".
2. Select a filter from the list.
3. Confirm selection with .

➔ The selected filter will be shown.

4. Tap on the filter.
5. Select the desired master data.

6. Confirm selection with .

➔ The jobs will be filtered according to the selected master data.




9.11

Sorting jobs

CMS-T-004588-A.1

Found jobs can be sorted according to the following methods:

- Name: the jobs are sorted alphabetically
- Time: the jobs are sorted according to the starting time. The most recent starting time is listed first.
- Distance: the jobs are sorted according to the distance from the corresponding field to the vehicle position.
- Map: existing field in a radius are shown on a small map. To select a job, the corresponding field can be selected from the map.

1. Tap on "Sorting".
 2. Select the sorting method.
 3. Confirm selection with .
- ➔ The existing jobs will be sorted.



9.12

Deleting a job

CMS-T-000129-C.1

The worked area and the recorded total values for the current job can be deleted.



NOTE

The master data and inventory data will not be deleted.



To delete master data, see page 133.

To delete inventory data, use the inventory data manager; see page 229.



REQUIREMENTS

- ✓ Job is interrupted; see page 123

1. In the job menu, tap on .
2. Tap on .
3. Confirm deleting.

9.13

Editing job data






CMS-T-007035-C.1

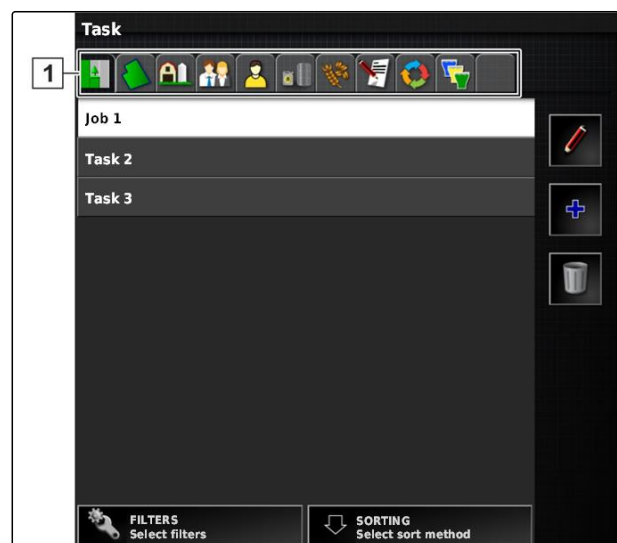
The job data manager is used to manage job data and master data.



REQUIREMENTS

- ✓ "Manage job data" is enabled in the user controls; see page 39

1. Select  in the function menu.
2. Using the 1, call up the tab for the desired data.
3. To sort or filter the master data,
select .
4. To edit master data,
select 
or
To add new master data,
select 
or
To delete master data,
select .




9.14

Calling up job information

CMS-T-000760-B.1

The information on the current job can be called up in the function menu.

1. In the function menu, tap on .
- ➔ The miniature view of the job information will be shown.

- 1 Job settings
- 2 Job statistics
- 3 Job total values
- 4 Track guidance
- 5 Job status: Job started:  Job stopped: 



2. To obtain a general overview, enlarge the miniature view.

9.15

Define working time


CMS-T-000416-C.1


During the execution of a job, detailed information can be entered about the work. For example, the time for repairs or work preparation can be documented in the job statistics.



REQUIREMENTS

- ✓ Function is enabled in user controls; see page 39
- ✓ Job is interrupted; see page 123

1. In the job menu, tap on .

2. Open the "Set time type" menu with .

3. Select the work to be performed.
 4. Start the job.
- ➔ The working time will be documented.

i NOTE

The default setting for the type of work is *"Effective"*. When the job is interrupted, the type of work will be set back to the default setting.



Managing fields

10



CMS-T-00000510-D.1

10.1

Creating a new field

CMS-T-000499-B.1

A field is defined as an area that should be worked. A field must be created so that boundary lines and flag points can be created and saved.

1. In the job menu, tap on .
2. Call up the "New field" menu with .
3. Enter a name for the field under "Name".

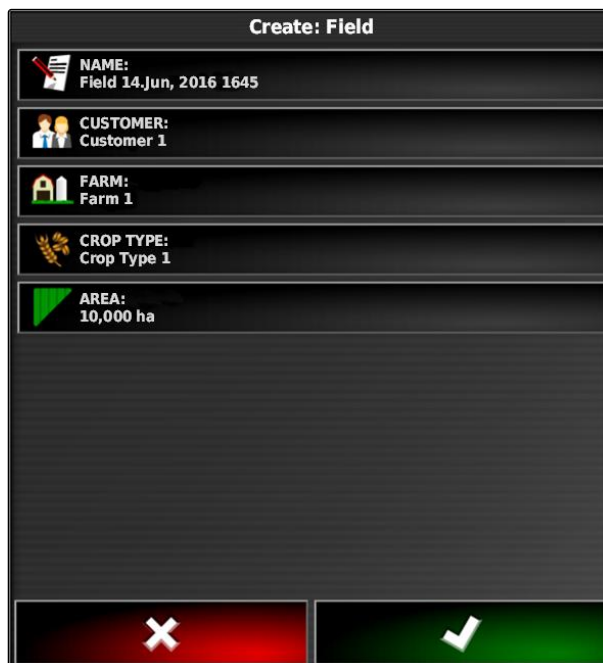
NOTE

Enter a sensible name to make it easier to manage the fields later.

NOTE

The following data belongs to the master data and is optional. To add the field to the master data, the master data can be selected from a list. If master data has not been created yet, see page 122.

4. Enter the owner of the field, the owner of the farm or the employer under "Customer".
5. Enter the farm to which the field belongs under "Farm".
6. Enter the plants that are on the field under "Crop type".
7. When a crop type has been selected under "Crop type", enter the plant variety that is on the field under "Crop variety".



The screenshot shows a mobile application interface for creating a new field. The form is titled "Create: Field" and contains the following fields:

- NAME:** Field 14.Jun, 2016 1645
- CUSTOMER:** Customer 1
- FARM:** Farm 1
- CROP TYPE:** Crop Type 1
- AREA:** 10,000 ha

At the bottom of the form, there are two buttons: a red button with a white "X" (cancel) and a green button with a white checkmark (confirm).

8. Enter the size of the field under "Area".

9. Confirm entries with .

10.2

Creating a boundary line

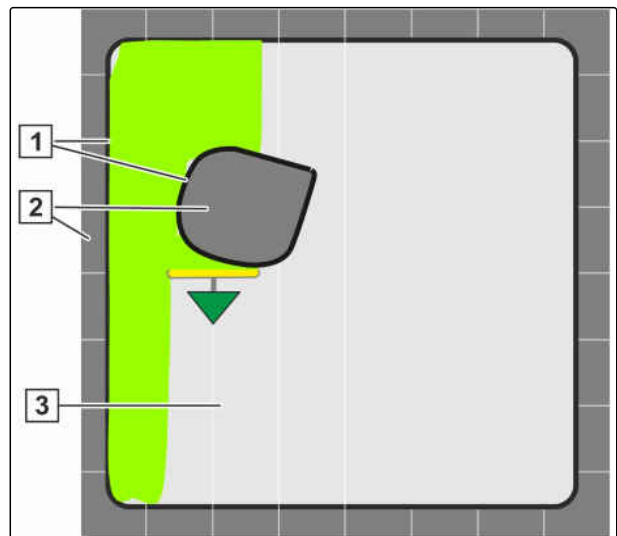
CMS-T-00000511-B.1

10.2.1 Creating the boundary line manually

CMS-T-00003592-A.1

An area can be marked with a boundary line **1**. This area can be defined as an exclusion area **2** or a work area **3**. Using the recorded boundary line, the AmaPad calculates the size of the marked area. When the area has been defined as a work area, the AmaPad can calculate the size of the worked areas and remaining areas. When a boundary line has been created, the automatic part-width section control can stop the application when the implement exits the work area.

A boundary offset can be configured for the boundary line recording. The boundary offset describes the distance between the middle of the vehicle and the edge of the vehicle or implement. When a boundary offset has been specified, the boundary line can be recorded without having to actually drive at the edge of the boundary area.



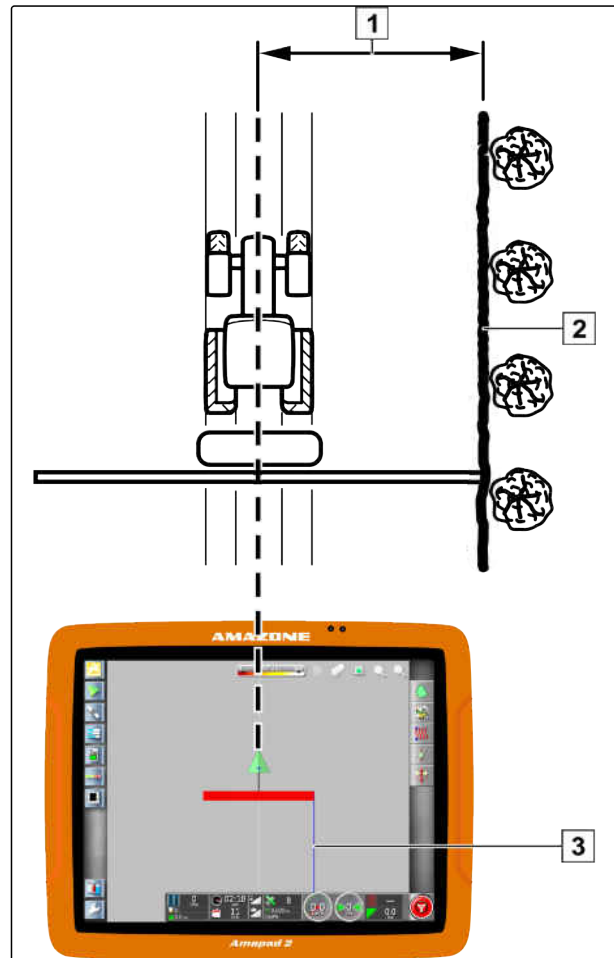
CMS-I-001384



NOTE

The boundary offset serves to precisely record the boundary line. Determine the exact boundary offset.

- 1 Boundary offset
- 2 Edge of the boundary area
- 3 Boundary line on the AmaPad



CMS-I-00000266



REQUIREMENTS

- ✓ Field is created; see page 136
- ✓ Job is created and the field is added to the job; see page 125
- ✓ Implement is selected; see page 100




NOTE


The implement does not need to be connected to the vehicle.





NOTE


The boundary line can also be recorded during application. To do so, the job must be started; see page 123.


1. In the Job menu, tap on .


2. Call up the "Boundary offset" menu with .

3. Under "Offset for recording", enter the side of the implement on which the boundary line is being recorded.
4. *To enlarge or reduce the boundary offset, enter a positive or negative value under "Additional offset".*
5. Under "Recording position", enter the exact position at which the boundary line is being recorded.
6. *To record the boundary offset in front of or behind the vehicle, enter a positive or negative value under "Additional front offset".*
7. Confirm entries with .
8. Drive to the field edge.
9. Start the boundary line recording with .
10. Drive around the boundary area.

Boundary Offset

 **RECORDING OFFSET**
Right

 **ADDITIONAL OFFSET**
0,000 m

 **RECORDING POSITION**
Implement Front

X


✓

CMS-I-002483



NOTE

If obstacles prevent driving at the edge of the boundary area or the vehicle must be turned, the boundary line recording can be interrupted. When the boundary line recording is continued, the resulting gap in the boundary line is automatically replaced by a straight line. To interrupt the boundary line recording, see page 140.

11. *When the starting point has been reached,*
 terminate the boundary line recording with .



➔ The boundary line will be saved and assigned to the selected field.
12. Edit the boundary line, see page 144.

10.2.2 Interrupting the boundary line recording

CMS-T-00000449-A.1

Interruption with the Pause button

CMS-T-000432-A.1

1. In the field menu, interrupt the boundary line recording with .
2. Resume the boundary line recording with .

Interruption with part-width section control

CMS-T-000426-A.1



REQUIREMENTS

- ✓ Function is enabled in the setup menu; see page 37
- ✓ Job is started; see page 123

1. Switch off all of the part-width sections.
➔ The boundary line recording is interrupted.
2. *To resume the boundary line recording:*
Switch on the part-width sections.

10.2.3 Creating boundary lines with a shape file

CMS-T-000375-C.1

Boundary lines that were previously created in a Farm Management Information System can be loaded as a shape file. The shape files can be imported to the AmaPad using a USB flash drive.



REQUIREMENTS


- ✓ Field is created; see page 136
- ✓ Job is created and the field is added to the job; see page 125





NOTE


If a shape file contains several boundary lines, all of the existing boundary lines are saved with this field.

1. Insert the USB flash drive with the shape file into the AmaPad.

2. In the job menu, tap on .

3. Tap on .


4. Tap on .

5. Tap on .

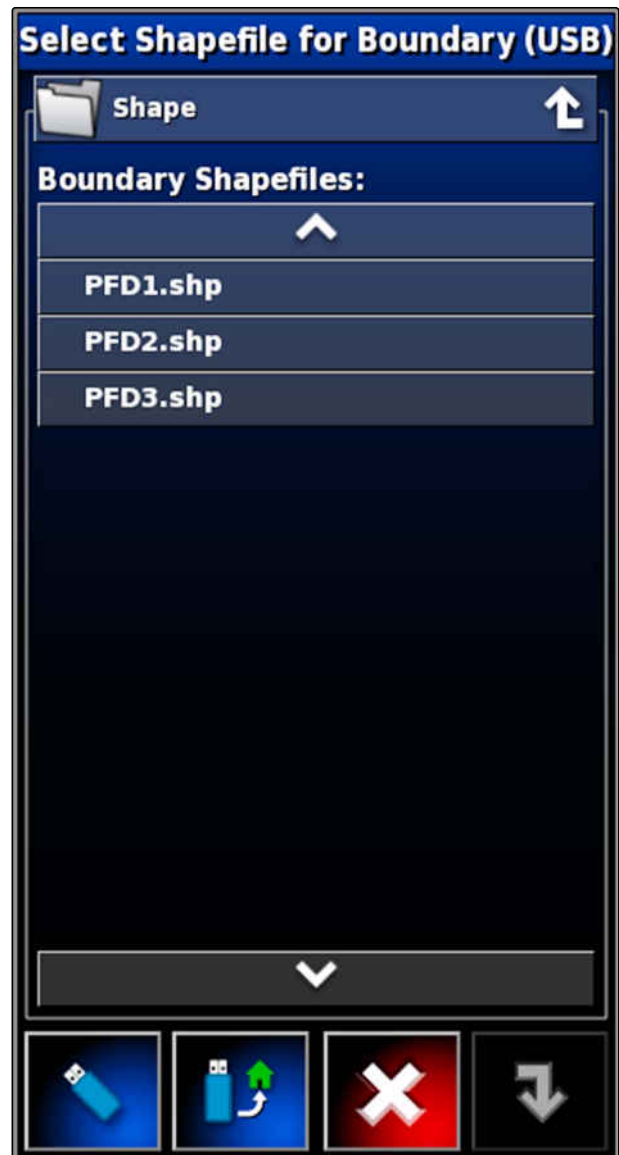
➔ The folders on the USB flash drive will be shown.

6. Select the folder containing the shape files.

7. Select the desired shape file.

8. Confirm with .

➔ If the vehicle is located near the boundary area, the boundary area will be shown on the map.



10.2.4 Creating the boundary line from the coverage


CMS-T-002602-B.1

The AmaPad can draw a boundary line around a worked area. This makes it possible e.g. to edit the edge of a field and to create the boundary line from the worked area. In addition to boundary lines for fields, boundary lines can be created for exclusion areas.



REQUIREMENTS










- ✓ All boundary line saved with this field have been deleted; see page 149
- ✓ The edge of the desired boundary area has been worked

1. In the job menu, open the field menu with .

2. select .

➔ The "Boundary line from coverage - Settings" menu will be opened.

With the "Smoothing", the radius with which the edges of the boundary line are smoothed is set. If there are gaps in the worked area, the gaps can be closed with the "Smoothing" function. To do this, the

Boundary From Coverage Settings
Smoothing
  25,0 m
Minimum Coverage Area
  0,00 ha
Distance From Coverage
 0,0 m
Excluded Regions
Minimum Excluded Area
  0,00 ha
 

gaps must be smaller than the value entered for smoothing.

3. Adjust the value for the smoothing using the slide bar

or

enter using the button.

With the *"Minimum covered area"* setting, the minimum size of the worked area to obtain a boundary line is defined.

4. Adjust the value for the minimum size of the worked area using the slide bar

or

enter using the button.

With the *"Distance from coverage"* setting, the distance from the boundary line to the worked area is defined.

5. Adjust the value for the boundary line distance using the slide bar


or

enter using the button.


6. *If an exclusion area should be created,* select the *"Exclusion areas"* button.


➔ The *"Exclusion areas"* button turns green.

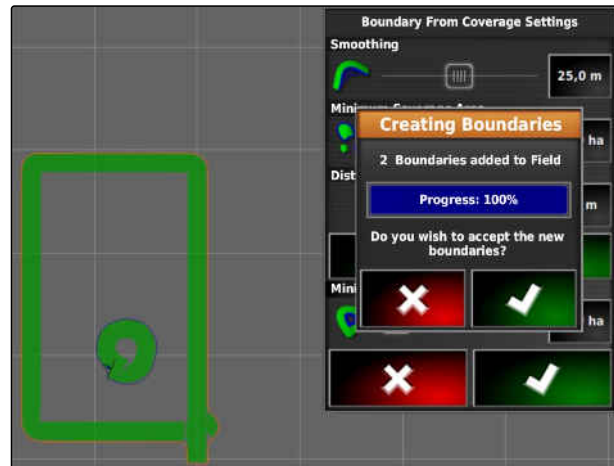
7. With the *"Minimum exclusion area"* setting, the minimum size for exclusion areas is defined.

8. Confirm the settings with .

➔ The boundary lines will be created according to the settings.

9. Check on the map whether the boundary lines have been properly created.
10. *If the boundary lines were not properly created,*
cancel the procedure with  and adjust the settings.

or
If the boundary lines were properly created,
accept the boundary lines with .



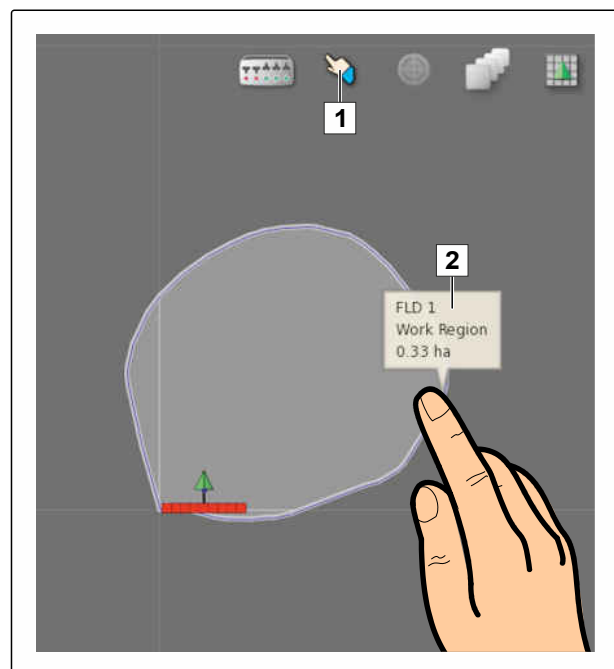
11. To edit boundary lines,
see page 144.

10.3

Editing the boundary line

CMS-T-001639-B.1

1. Place your finger on any point on the map.
- ➔ The selection confirmation **1** will be coloured after half a second.
2. Move your finger on a boundary line until the boundary line information **2** is shown.
3. Take your finger off the map.



4. Enter a name for the boundary line under "Name".

If the selected boundary line is located within a different boundary line, a headland can be drawn around the selected boundary line with the *"Including the headlands"* setting.

Possible settings:

- "Yes": A headland is drawn around the inner boundary line.
- "No": The inner boundary line has no headland.


The *"Boundary area type"* setting defines how the selected boundary line should be treated.

Possible settings:

- *"Work area"*: the area within the boundary line can be worked.
- *"Exclusion area"*: the area within the boundary line cannot be worked. The automatic part-width section control stops the spreading/application.
- *"Disabled"*: the boundary line is not taken into account.



: Delete boundary area.

5. Confirm the settings with .

Edit Boundary



NAME
Field Boundary 1



EXCLUSION HEADLAND
No



REGION TYPE
Work Region







10.4

Configuring the headlands

CMS-T-000411-E.1

The headland describes the area within the boundary line in which the vehicle is turned. The headland boundary is marked with an orange-coloured line on the AmaPad.



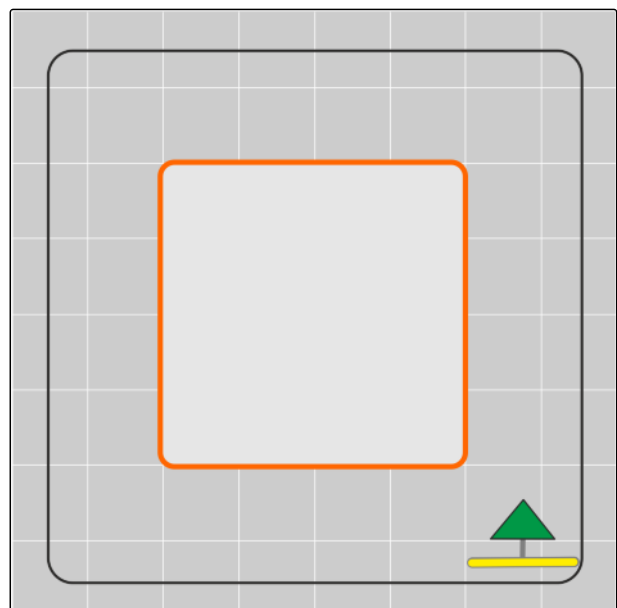
NOTE

The automatic part-width section control can be configured such that the sections are switched off inside the headlands; see page 195.



NOTE



If a boundary line is located within a different boundary line, an additional headland can be drawn around the inner boundary line.






REQUIREMENTS

- ✓ Boundary line is created; see page 137

1. In the job menu, tap on .
2. Call up the headland options with .
3. Enable the headlands under "Headlands".
4. Under "Headland width", enter the distance between the boundary line and the headland boundary.

Under the "Headland offset" setting, a negative and a positive value can be entered to nudge the headland boundary.

5. *If the headland boundary should be nudged*, enter the value for the offset under "Headland offset".
6. Under "Look ahead", enter the distance from the headland boundary at which the set actions should be performed.
7. *If actions should be triggered when the vehicle approaches the headland*, see page 146.

8. Confirm the settings with .

Headland Options


HEADLAND
Active

HEADLAND WIDTH (SWATHS)
1

HEADLAND OFFSET
0,0 m

LOOK AHEAD
10 m

Configure actions



10.5

Setting the headland action

CMS-T-00000450-A.1


Configuring the alarm

CMS-T-001458-B.1

When this headland action is enabled, the AmaPad issues an alarm when the vehicle approaches the headland.

1. In the "Headland options" menu, tap on "Configure actions".



2. Under "Action name", select "Alarm".
3. Under "Action state", enable the action.
4. Under "Message", enter a text for the alarm message.
5. Under "Audio type", select whether an alarm tone should be issued.
6. Confirm the settings with .



Configuring Auto Zoom

CMS-T-001464-B.1

When this headland action is enabled, the AmaPad zooms on the map when the vehicle approaches the headland.

1. In the "Headland options" menu, tap on "Configure actions".

Headland Options

HEADLAND
Active


HEADLAND WIDTH (SWATHS)
1

HEADLAND OFFSET
0,0 m

LOOK AHEAD
10 m

Configure actions

✓

2. Under "Action name", select "Auto Zoom".
3. Under "Action state", enable the action.
4. Under "Zoom level", set the extent to which the automatic zoom should enlarge the map.
5. Confirm the settings with .

Configure Headland Actions

Action Name

✓ Auto Zoom

✓ Alarm

ACTION STATE
Enabled

Zoom Level

5



✓

10.6

Deleting all boundary lines

CMS-T-000711-B.1

With this function, all of the boundary lines that are assigned to the selected field will be deleted.

1. In the job menu, tap on .
2. Delete all of the boundary lines for the selected field with .
3. Confirm deleting.

10.7

Setting flag point

CMS-T-00000451-B.1

10.7.1 Setting flag points for hazards

CMS-T-000317-C.1

Flag points can be used to mark hazard points and obstacles on the field.



NOTE



Flag points can be adjusted in the setup menu, see page 78.

1. Drive to the hazard point.



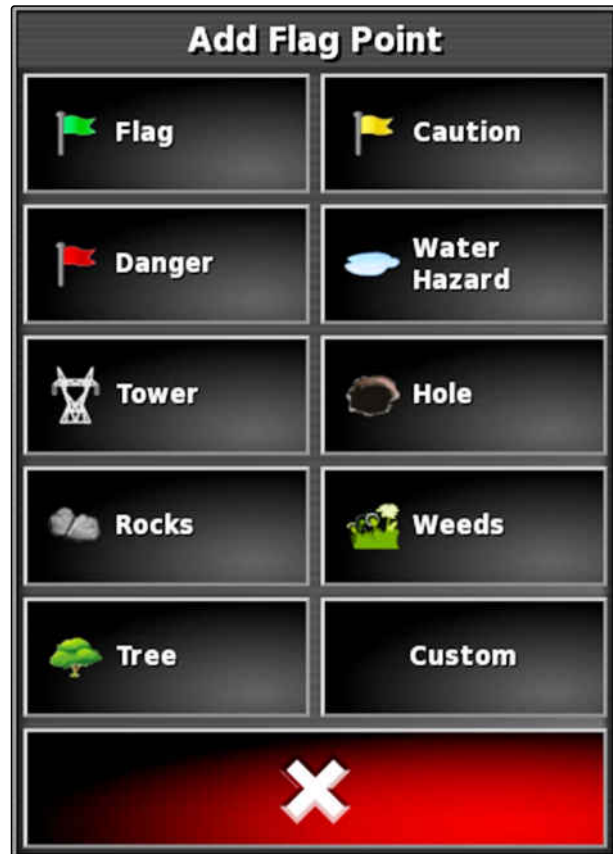
NOTE

Flag points are always set at the position of the vehicle rear axle.

2. In the job menu, tap on .
3. Call up the "Add marker" menu with .

4. Select the desired flag point.

➔ The selected flag point has been set.




10.7.2 Setting custom markers


CMS-T-000391-A.1

1. Drive to the hazard point.

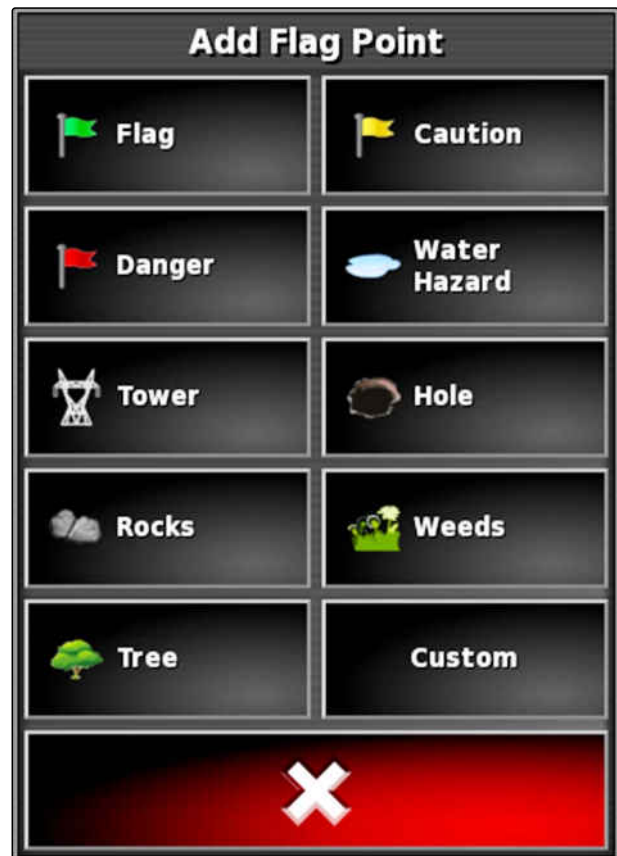
NOTE

Flag points are always set at the position of the vehicle rear axle.

2. In the job menu, tap on .

3. Call up the "Add marker" menu with .


4. Tap on "Custom".



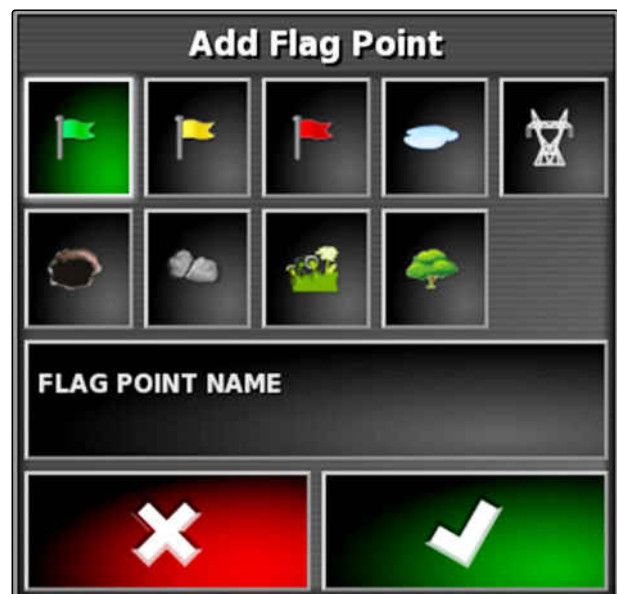
5. Select the desired symbol.

6. Tap on "Flag point name".

7. Enter the name.

8. Confirm with .

➔ The flag point has been set.



10.7.3 Setting flag points for GPS drift correction

CMS-T-000387-A.1

With the GPS drift correction, deviations in the GPS signal can be corrected. A flag point can be used as a reference point in this case.



REQUIREMENTS



- ✓ GPS signal with the highest possible precision is available
- ✓ Vehicle geometry is defined; see page 87

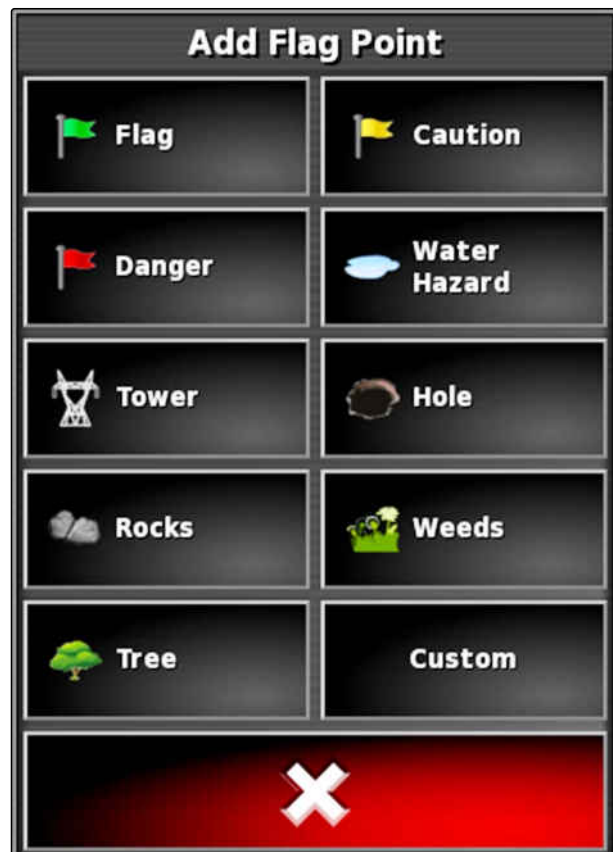
1. Drive to a distinctive position on the field that can serve as a reference point.



NOTE

Flag points are always set at the position of the vehicle rear axle.


2. In the job menu, tap on .
3. Call up the "Add marker" menu with .
4. Tap on "Custom".



5. Select the desired symbol.
6. Tap on "Flag point name".

NOTE

Enter a sensible name to clearly identify the flag point as a reference point.

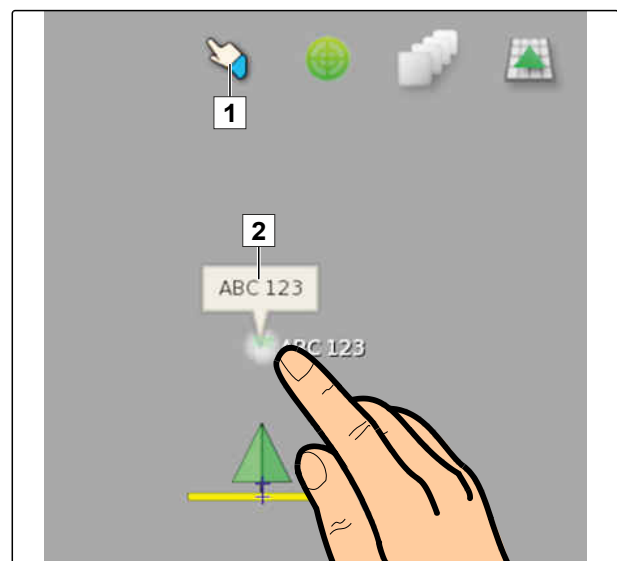
7. Enter the name.
8. Select the desired symbol.
9. Confirm with .

➔ The flag point has been set.



10.7.4 Editing flag points

1. Place your finger on any point on the map.
- ➔ The selection confirmation **1** will be coloured after half a second.
2. Move your finger on a flag point until the flag point name **2** is shown.
 3. Take your finger off the map.



➔ The flag point options will be opened.

Possible settings:

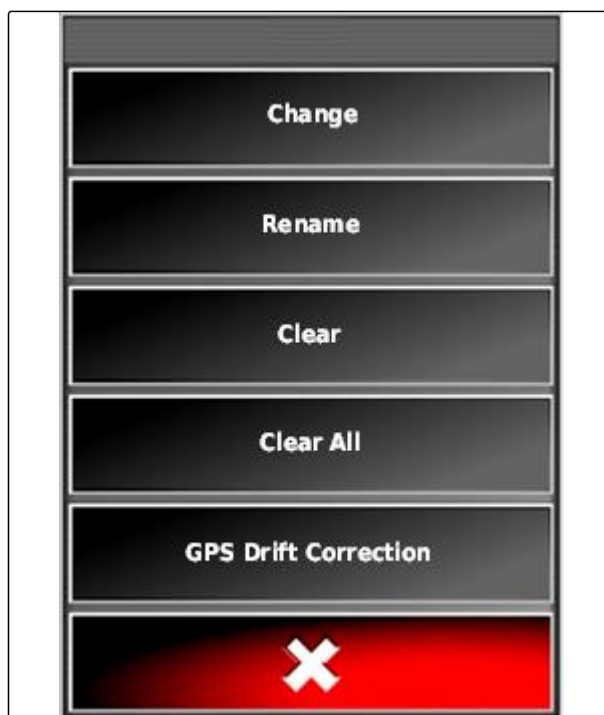
"Change": Change the symbol for the flag point.

"Rename": Rename the flag point.

"Delete": Delete the flag point.

"Clear all": Delete all of the flag points for the current job.

"GPS drift correction": Perform GPS drift correction. The vehicle symbol will be moved to the position of the selected flag point; see page 173



Using track lines

11

CMS-T-00000497-D.1

11.1

Selecting the track line pattern





CMS-T-003889-C.1








Track lines show the driver which track he needs to follow to work the field uniformly. Track lines are also required for automatic steering control. The spacing of the track lines corresponds to the set working width.



NOTE

Depending on the previously set track line pattern, the following symbols can be shown on the button for opening the track line menu:

-  for straight A-B lines
-  for circular track lines
-  for curved track lines
-  for adaptive curve track lines

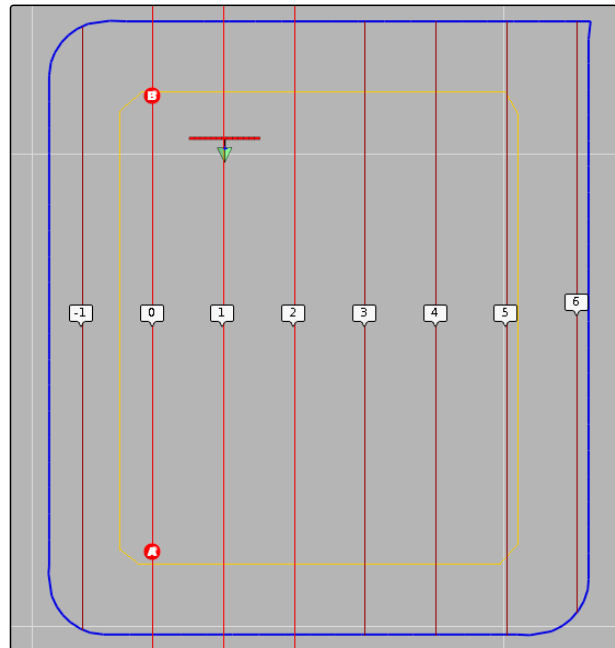
1. In the job menu, open the track line menu with , ,  or .
 2. To select a track line pattern, tap on , , or  again in the track line menu.
 3. Select the desired track line pattern.
- ➔ The symbol for the selected track line pattern is shown on the button for the track line menu.

11.2

Creating a straight A-B line

CMS-T-00000578-B.1

Straight A-B lines are suitable for fields that are mainly worked on straight tracks.



CMS-I-000596







REQUIREMENTS



- ✓ Field is created; see page 136
- ✓ Track line pattern for A-B lines is selected; see page 155



NOTE

Without a boundary line, only the middle track line and the track lines left and right of the vehicle symbol are shown. To have the track lines displayed for the entire field, a boundary line must be created; see page 137.

1. In the Job menu, tap on .
2. Open the "New track" menu with .
3. Enter the name for the track line.
4. Confirm the entry with .
5. Confirm with .
6. Drive to the position on the field where the A-B line should begin.

7. Define the starting point of the A-B line with .
 8. Drive to the end of the row.
 9. Set the end point of the A-B line with .
- ➔ The AmaPad will automatically add the other track lines.

11.3

Creating the A-B line manually





CMS-T-000445-C.1


The coordinates of the starting point and end point of the A-B line can be entered manually. The coordinates can come from a Farm Management Information System or from a leading vehicle.



REQUIREMENTS

- ✓ Field is created; see page 136
- ✓ Track line pattern for A-B lines is selected; see page 155

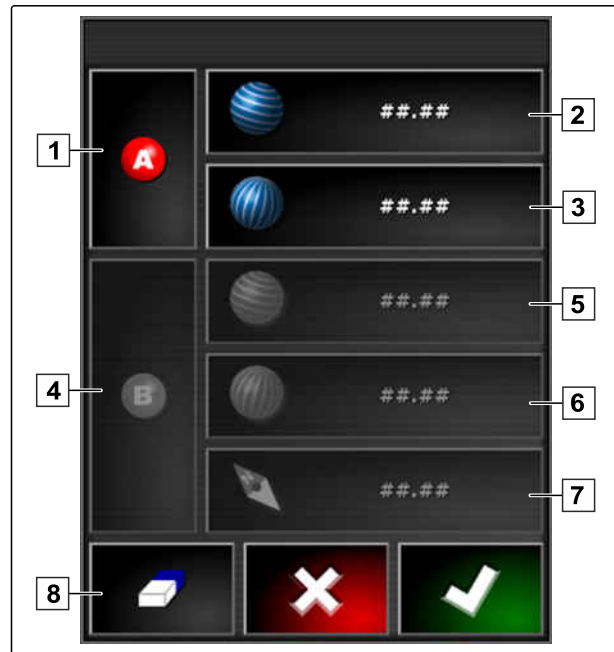
1. In the Job menu, tap on .
 2. Open the "New track" menu with .
 3. Enter the track name.
 4. Confirm with .
- ➔ The symbol for setting the starting point is shown:
- .

5. Open the track line menu with .
6. Open the menu for entering the coordinates with




Possible settings:

- 1 Set start point: Defines the starting point of the A-B line using the current vehicle position.
- 2 Latitude of the starting point for the A-B line.
- 3 Longitude of the starting point for the A-B line.
- 4 Set end point: Defines the end point of the A-B line using the current vehicle position.
- 5 Latitude of the end point for the A-B line.
- 6 Longitude of the end point for the A-B line.
- 7 Direction of the track line: Instead of the coordinates of the end point for the A-B line, the direction of the track line from the starting point can be entered in degrees.
- 8 Delete entries.



CMS-I-000417

7. Enter coordinates.

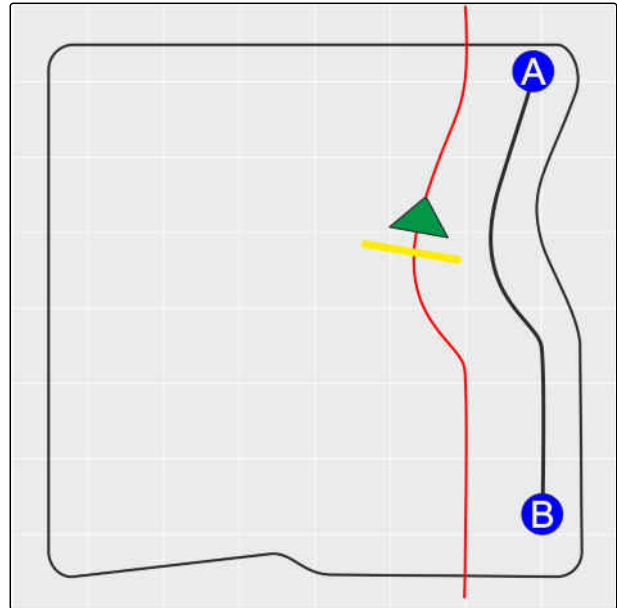
8. Confirm with .

11.4

Creating curved track lines

CMS-T-000449-C.1

Curved track lines are suitable for fields that are not rectangular. Curved track lines can be recorded e.g. along an irregular field edge. The field edge then serves as a template for the curved track line.



CMS-I-00001247



REQUIREMENTS

- ✓ Field is created; see page 136
- ✓ Track line pattern for curved track lines is selected; see page 155

1. select
2. Call up the "New track" menu with
3. Enter the track name.
4. Confirm with
5. Drive to the position on the field where the curved track line is supposed to begin.

6. Set the starting point of the curved track line with



- ➔ The recording of the curved track line will be marked with a black line.

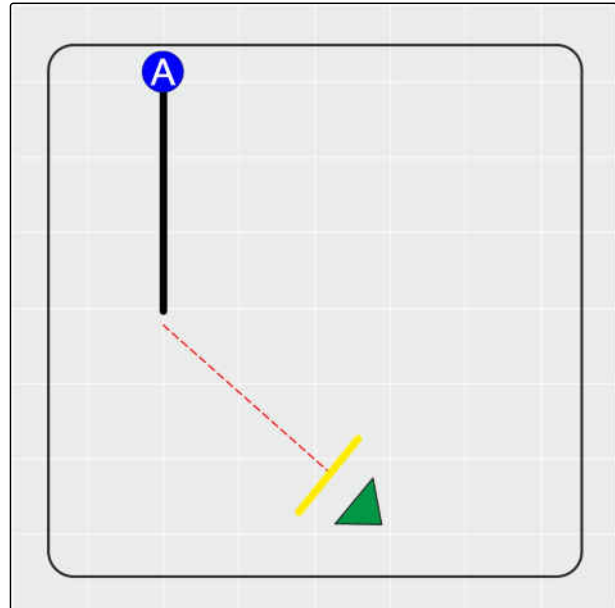
7. *To interrupt the track line recording,*



- ➔ A red dashed line appears between the end of the recorded track line and the vehicle symbol.

NOTE

When the track line recording is resumed, the gap between the end of the recorded track line and the vehicle symbol will be replaced by a straight line.



CMS-I-00001245

8. *To resume the track line recording,*



- ➔ The red dashed line will be replaced by a black line.

9. Drive to the end of the row.

10. Set the end point of the curved track line with



NOTE

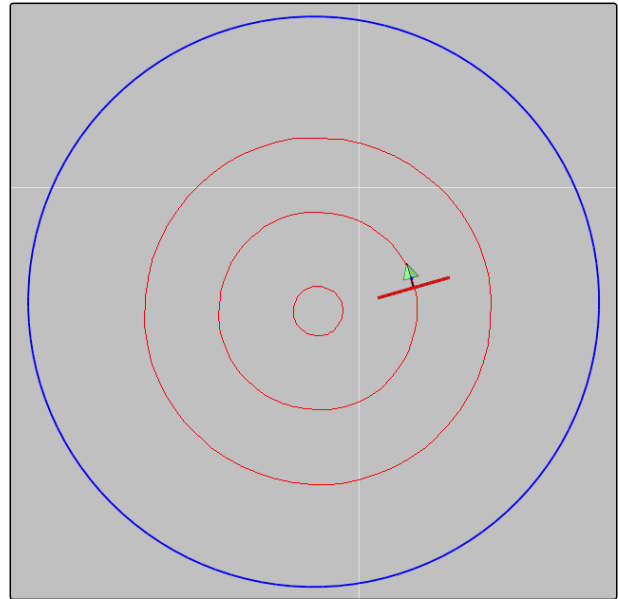
Initially, only the recorded curved track line is shown. The corresponding curved track line will only be shown when the vehicle changes to the next row.

11.5

Creating circular track lines

CMS-T-000621-C.1

Circular track lines are suitable for special forms of management, where the fields are worked in a circular pattern around the centre of the field.






CMS-I-000535



REQUIREMENTS


- ✓ Field is created; see page 136
- ✓ Track line pattern for circular track lines is selected; see page 155

1. In the Job menu, tap on .
2. Call up the "New track" menu with .
3. Enter the track name.
4. Confirm with .
5. Drive to the centre of the field.



NOTE

The circular track line will be created around the centre of the field. Ensure that there is enough space available to drive around the centre of the field.

6. Start recording the circular track line with .
- ➔ A scale is shown for the precision of the recorded circular track line.
7. Drive in circles around the centre of the field.
- ➔ When the AmaPad has detected the radius of the circle, circular track lines will be created.



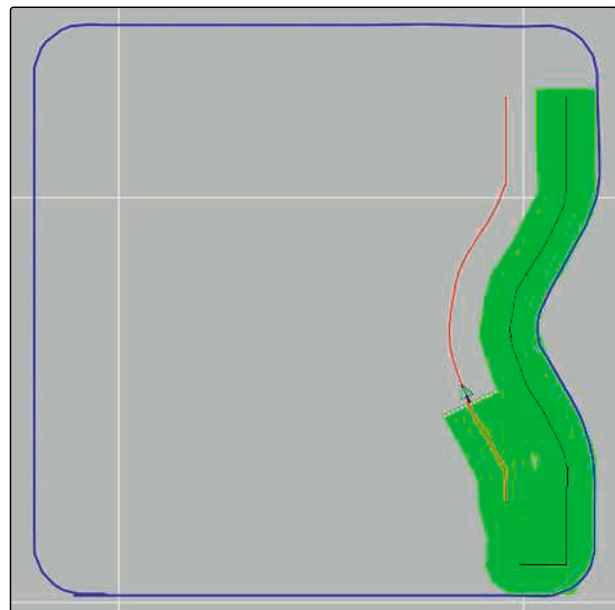
NOTE

Only the middle circular track line and the circular track lines right and left of the vehicle are shown.
The next circular track lines will only be shown when the vehicle changes to the next row.

11.6

Creating adaptive track lines


The adaptive curved track line follows the edge of the previously worked area. This takes account of unexpected deviations while working, e.g. due to obstacles.





REQUIREMENTS

- ✓ Field is created; see page 136
- ✓ Track line pattern for adaptive track lines is selected; see page 155

1. In the Job menu, tap on .

2. Start the job.

3. Work the row.

➔ The adaptive curved track line will be recorded.



NOTE

The adaptive curved track line will only be shown when the vehicle changes to the next row.

11.7

Using limited steering

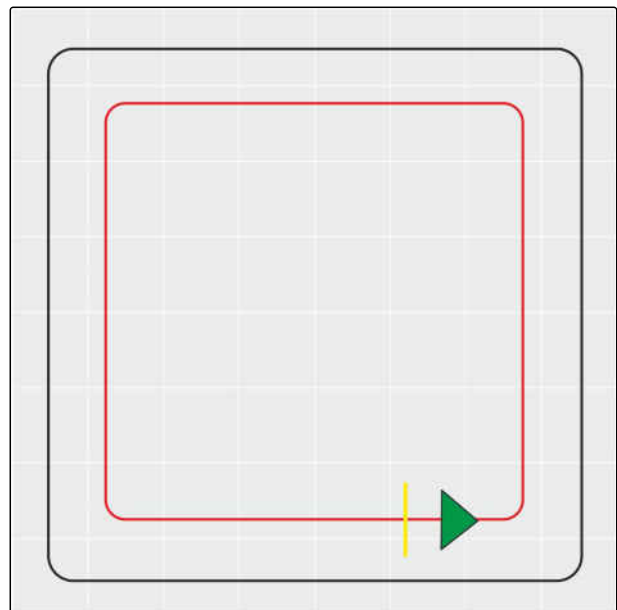
CMS-T-00001824-B.1

With limited steering, track lines are created within the field boundaries or outside of exclusion areas.



NOTE

Check the steering along the field boundary, as there can be deviations in case of GPS malfunctions.





CMS-I-00001108



REQUIREMENTS

- ✓ Field is created; see page 136
- ✓ Track line pattern is selected; see page 155

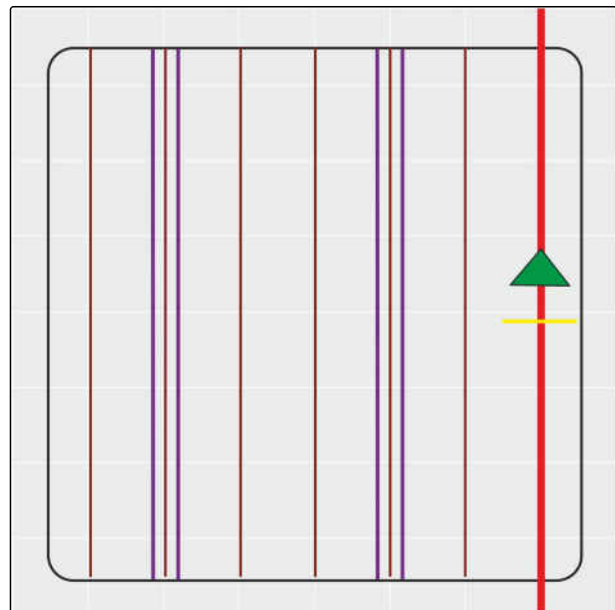
1. In the job menu, open the track line menu.
2. *To create track lines along the limits for the cultivating implement,*
tap on  again in the Track line menu, and
then tap on .
3. Create the limit lines.

11.8

Creating tramlines

CMS-T-00001827-B.1

Tramlines are created, shown on the display, and saved as track lines to be used again with a cultivating implement. The track line file contains the suffix "_tramline".



CMS-I-00001104



REQUIREMENTS


- ✓ Field is created; see page 136
- ✓ Track line pattern is selected; see page 155

1. In the job menu, open the Track line menu with



2. To create tramlines for the cultivating implement,



tap on  in the Track line menu.

3. Configure the tramlines.



NOTE

The following entries are required:

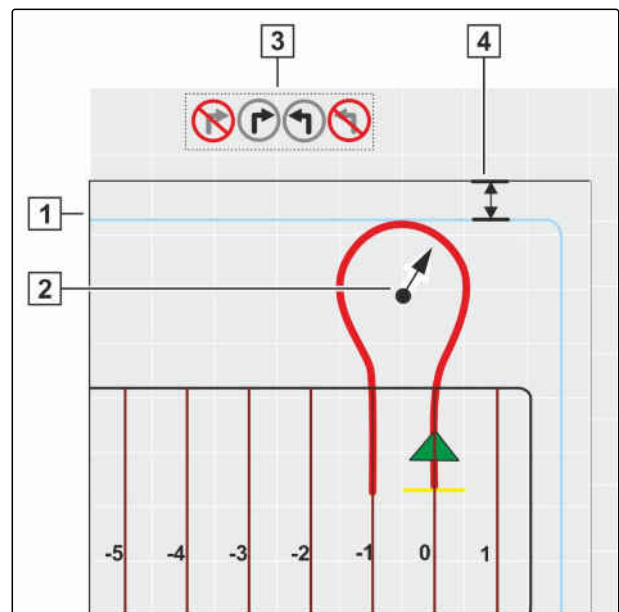
- Working width (m)
- Track width (m)
- First swath
- Offset

11.9

Creating an automatic turning manoeuvre

CMS-T-00001826-B.1

- 1 Turning manoeuvre line
- 2 Turning radius
- 3 Direction of the turning manoeuvre. Arrow crossed out: Malfunction → Perform the turning manoeuvre manually.
- 4 Distance between the field boundary and the turning manoeuvre line



CMS-I-00001129




REQUIREMENTS

- ✓ Field is created; see page 136
- ✓ Activate the headland; see page 49

1. In the job menu, open the Track line menu with





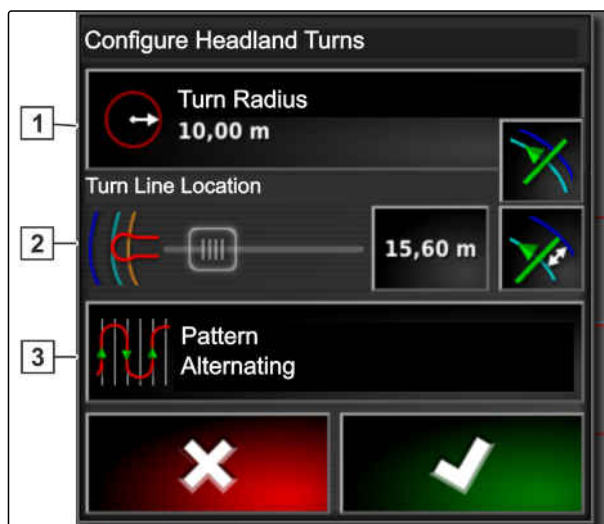
2. To create an automatic turning manoeuvre on the headlands,

tap on  in the Track line menu.

3. Configure the headland turning manoeuvre.




Possible settings:

- 1 Turning radius.
- 2 Define the turning manoeuvre line position using the controller or by entering a number. Selection: Passing of the sprayer boom over the field boundary permitted  or not permitted .
- 3 Select the pattern.



CMS-I-00001112

Select the pattern:

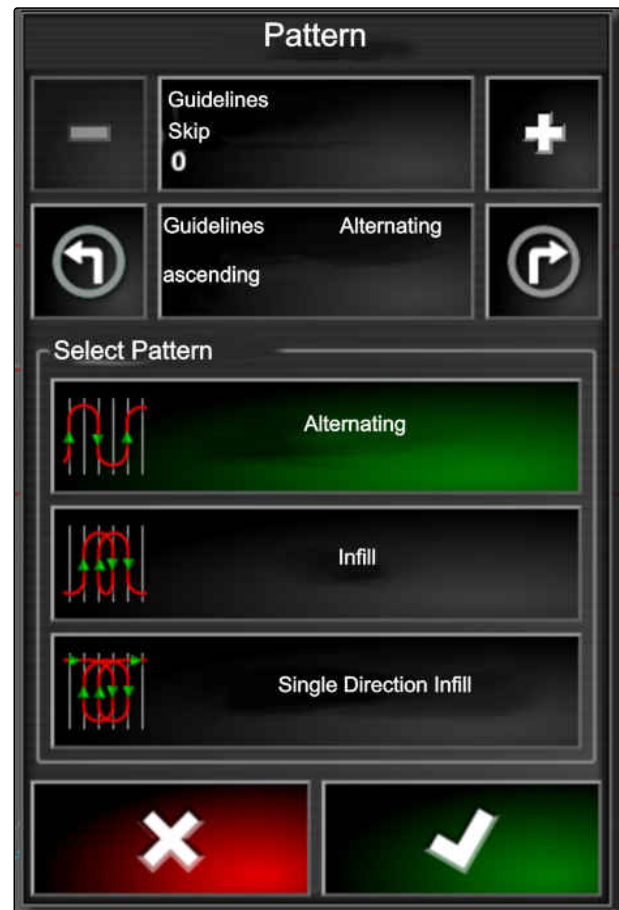
-  Alternating
-  Infill
-  Single direction infill



NOTE

Skip the desired number of track lines.

Select the first track line change according to ascending or descending track line number.



CMS-I-00001877

11.10

Re-using track lines

CMS-T-000769-C.1

Created track lines can be re-used for different jobs.






NOTE

Adaptive curved track lines cannot be re-used.




REQUIREMENTS

- ✓ Field is created; see page 136
- ✓ The track line pattern to be re-used is selected; see page 155

1. Depending on the selected track line pattern, tap on ,  or  in the Job menu.

2. Call up the menu for selecting the track line with



3. *If the track line should be imported from a USB flash drive,*
select the **5** button.
4. Select the customer **1**.
5. Select the farm **2**.
6. Select the field **3**.
7. Select the track line **4**.
8. Confirm with .



NOTE

If a correction source with low precision has been selected, a precision warning will be shown. A correction source with low precision cannot guarantee that the created track lines can be precisely followed.



CMS-I-000601

11.11

Following track lines

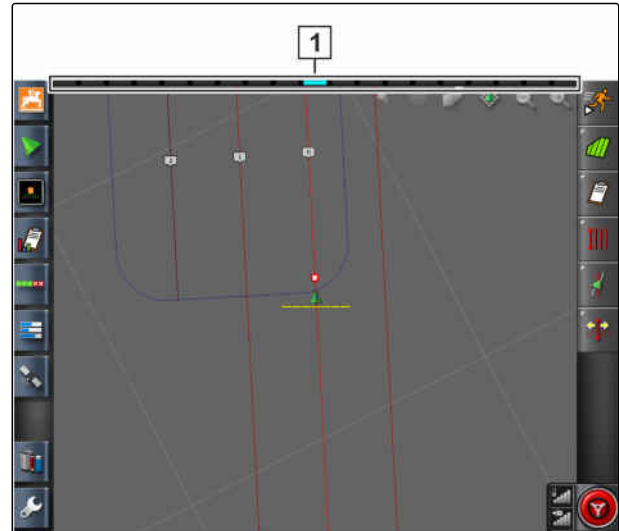
CMS-T-00000498-B.1

11.11.1 Checking the track deviation with lightbars

CMS-T-00000499-B.1

The lightbar is located at the upper edge of the touchscreen **1**. During operation, the lightbar shows how far the vehicle has deviated from the defined track line.

The vehicle is on the right track when only the blue LED in the middle of the light bar is lit. When the vehicle deviates from the track line, the LEDs of the lightbar on the sides of the blue LED light up. The side on which the LEDs of the lightbar begin to light up depends on the basic settings.



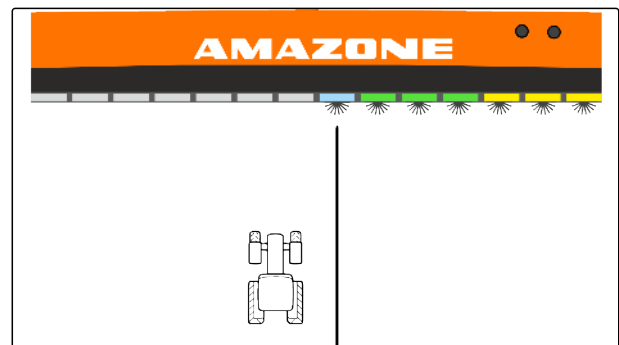
CMS-I-00000262



REQUIREMENTS

- ✓ The lightbar is enabled, see page 28.
- ✓ LED mode is selected, see page 28.

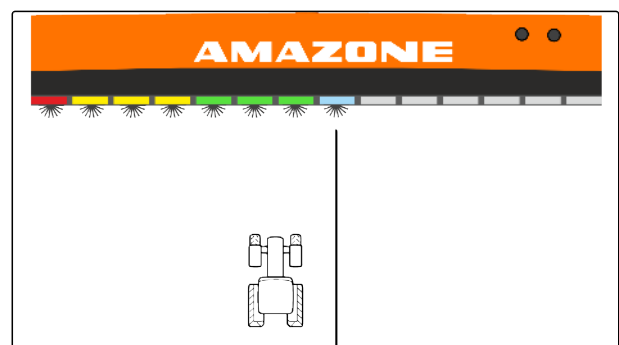
- When the LED mode "Driving to" has been selected,
steer the vehicle towards the side on which the LEDs are lit on the lightbar.



CMS-I-00000261

or

- When the LED mode "Driving away" has been selected,
steer the vehicle away from the side on which the LEDs are lit on the lightbar.



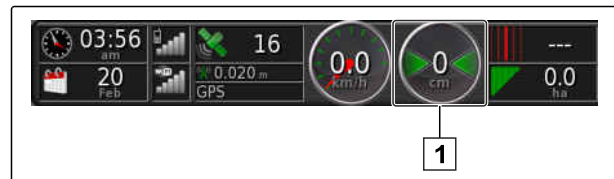
CMS-I-00000268

11.11.2 Checking the track deviation with the dashboard

CMS-T-001524-C.1

The dashboard is located at the bottom edge of the operating menu. In the track deviation data field **1**, the deviation of the vehicle from the track line is shown.

The vehicle is on the right track when 2 green arrows are shown beside the zero. Depending on the basic setting, a red arrow is shown beside the track deviation when the vehicle deviates from the track line.



CMS-I-001021



REQUIREMENTS

- ✓ Display for the track deviation is enabled on the dashboard; see page 117
- ✓ LED mode is selected; see page 28



NOTE

The lightbar can remain disabled for the track deviation display on the dashboard.

1. When the LED mode "Driving to" has been selected,
steer the vehicle towards the side on which the red arrow appears.
2. When the LED mode "Driving away" has been selected,
steer the vehicle away from the side on which the red arrow appears.

11.12

Correcting the track lines

CMS-T-00000246-D.1

The course of the track lines can be corrected to compensate for deviations. The deviations of the track lines are caused by GPS drift. When the displayed track lines no longer match the real tracks on the field, the displayed track lines can be manually nudged on the AmaPad.

- ▶ To correct the track lines, see page 175.

Correcting the GPS reception

12

CMS-T-00000454-B.1

12.1

Performing the GPS drift correction

CMS-T-00000455-A.1

12.1.1 Correcting the GPS drift with the GPS drift options



CMS-T-000655-B.1

GPS drift is defined as the deviations of the GPS signal that result from the use of correction sources with low precision. GPS drift can be recognised when the vehicle symbol on the AmaPad no longer corresponds to the actual position of the vehicle.



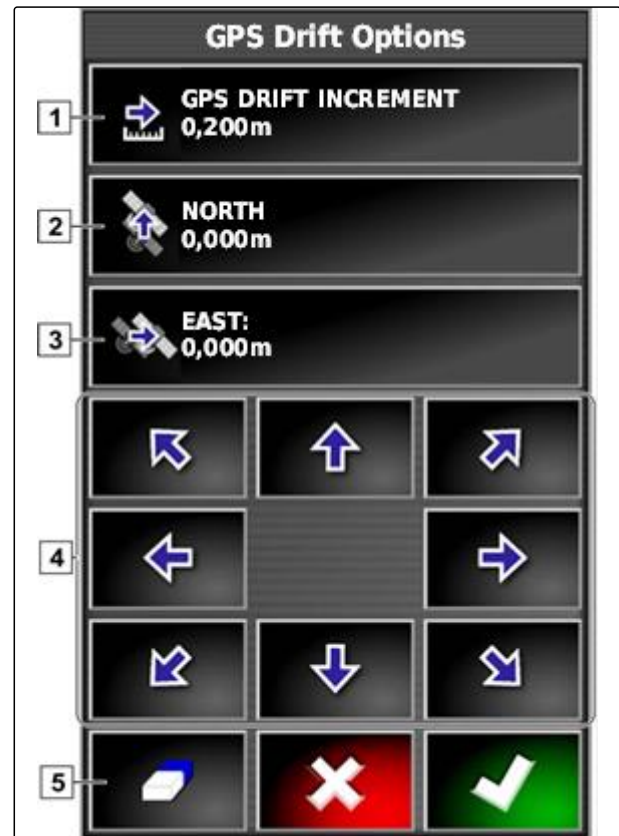
NOTE


To detect the GPS drift, a real and a virtual reference point are required. The real reference point can be a position on the field that is easy to see, e.g. the entrance to a field or wheel tracks on an already worked area. The virtual reference point on the AmaPad can be the boundary line, a flag point or the worked area.

1. In the job menu, tap on .
2. Call up the GPS drift options with .

Possible settings:

- 1 Enter the length of the individual correction increments.
- 2 Display for the length of the correction that was already performed. Positive value for a correction increment towards the north. Negative value for a correction increment towards the south.
- 3 Display for the length of the correction that was already performed. Positive value for a correction increment towards the east. Negative value for a correction increment towards the west.
- 4 Direction arrow for individual correction increments. Enter the length for the correction increment 1.
- 5 Undo all of the corrections.



3. Make corrections until the position of the vehicle symbol corresponds to the real position of the vehicle.
4. Confirm with .

12.1.2 Correcting the GPS drift with a flag point

CMS-T-000663-B.1

GPS drift is defined as the deviations of the GPS signal that result from the use of correction sources with low precision. GPS drift can be recognised when the vehicle symbol on the AmaPad no longer corresponds to the actual position of the vehicle.



NOTE

To detect the GPS drift, a real and a virtual reference point are required. The real reference point can be a position on the field that is easy to see, e.g. the entrance to a field or wheel tracks on an already worked area. A flag point can be used as a virtual reference point onto which the vehicle symbol is nudged.



REQUIREMENTS

- ✓ Flag point is set as a reference point; see page 151

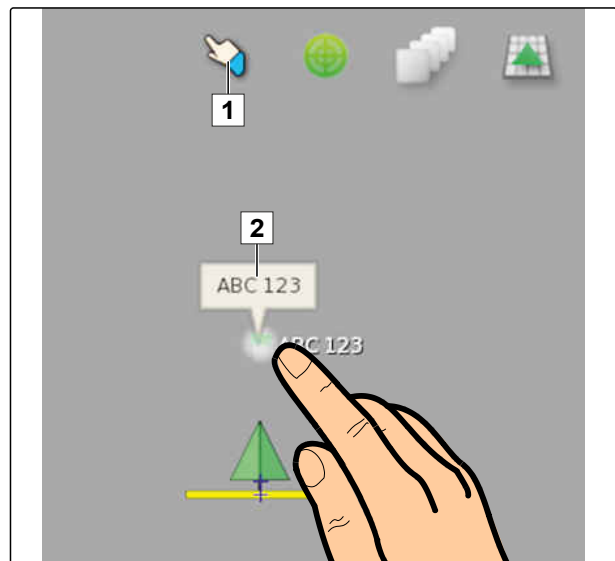
1. Place your finger on any point on the map.

➔ The selection confirmation **1** will be coloured after half a second.

2. Move your finger on a flag point until the flag point name **2** is shown.

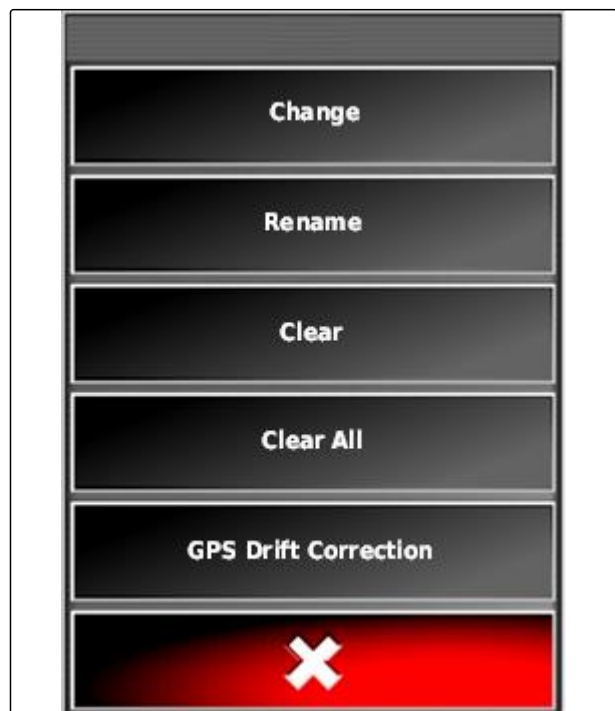
3. Take your finger off the map.

➔ The flag point options will be opened.



4. Tap on "GPS drift correction".

➔ The vehicle symbol will be moved to the position of the selected flag point.



12.2



Correcting the track lines

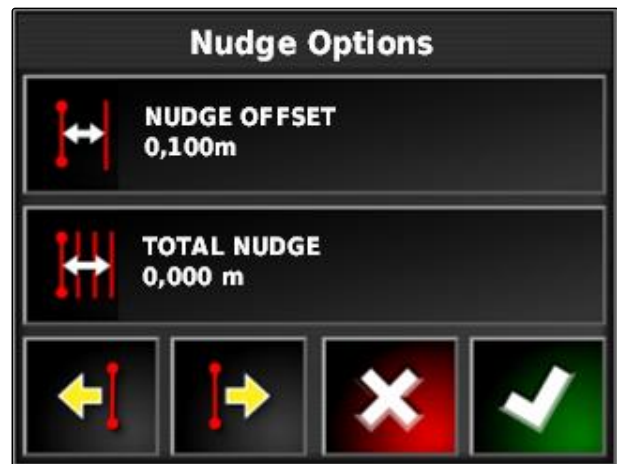
CMS-T-00000456-B.1

12.2.1 Nudge the track lines in increments

CMS-T-000780-B.1

The course of the track lines can be corrected to compensate for deviations that are caused by GPS drift. When the displayed track lines no longer match the real tracks on the field, the displayed track lines can be manually nudged on the AmaPad.

1. In the job menu, tap on .
2. Call up the nudge options with .
3. Tap on "Nudge offset".
4. Enter the length by which the track line should be nudged with each correction increment.



5. When the track lines should be nudged to the left,

tap on .

or

When the track lines should be nudged to the right,

tap on .



6. Tap on the button until the track lines on the AmaPad match with the real tracks on the field.

12.2.2 Nudging the track lines by a specified length

CMS-T-000786-C.1

The course of the track lines can be corrected to compensate for deviations that are caused by GPS

drift. When the displayed track lines no longer match the real tracks on the field, the displayed track lines can be manually nudged by a specified length on the AmaPad.

1. In the job menu, tap on .
2. Call up the nudge options with .
3. Tap on "Total nudge".

NOTE

On the "Total nudge" button, the length by which the track lines were nudged is shown. Other nudges must be added or subtracted.

4. *When the track lines should be nudged to the right,*
enter a positive value.

or

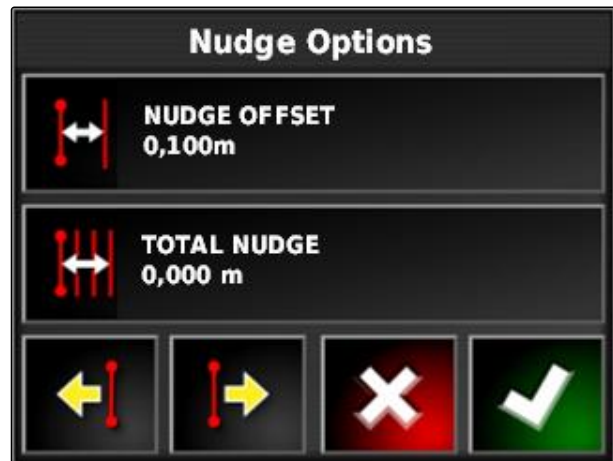
When the track lines should be nudged to the left,
enter a negative value.

or

If all of the nudges should be reversed,
enter "0".

5. Confirm with .



➔ The track lines will be nudged by the specified value.



12.2.3 Nudging the track line to the vehicle position

CMS-T-000783-B.1

The course of the track lines can be corrected to compensate for deviations that are caused by GPS drift. When the displayed track lines no longer match the real tracks on the field, the displayed track lines can be manually nudged to the vehicle position on the AmaPad.

1. In the job menu, tap on .
2. Nudge the closest track line to the vehicle position with .

12.3





Saving the corrected track lines

CMS-T-000793-C.1



NOTE

The corrected track lines must be saved under a new name. The previously created track lines are maintained.

1. In the job menu, tap on .
2. Call up the "Save shifted track line" menu with .
3. Tap on "Track line name".
4. Enter the name for the track line.
5. Confirm the entry with .
6. Confirm with .

➔ The corrected track lines will be saved and assigned to the current field.




12.4

Calling up GPS information

CMS-T-000608-A.1

GPS information can be called up in the function menu.

- In the function menu, call up the miniature view of the GPS information with .

- 1 GPS position
- 2 Vehicle orientation
- 3 GPS precision



GPS precision

- 1 Number of satellites, call up satellite information
- 2 Used correction signal
- 3 Age of the correction signal in seconds
- 4 Horizontal position deviation: Value smaller than 1: high precision, value greater than 4: low precision



Using automatic steering

13

CMS-T-00000457-B.1

13.1

Steering calibration

CMS-T-000668-C.1

Using the GPS data, the AmaPad can control the steering of the vehicle and keep it on a created track line. The steering must be calibrated for the automatic steering to function properly.



NOTE

In this operating manual, only the steering calibration for the AMAZONE Pantera self-propelled sprayer will be described. For information on other vehicles, please contact AMAZONE.



IMPORTANT

Risk of implement damage!



The required driving manoeuvre can cause damage to the coupled implement or the sprayer boom.

- Uncouple the implement and fold the sprayer boom before you begin with the compass calibration.



NOTE

Compass calibration involves driving in a circle and driving straight ahead for 100 m.

1. Ensure that you have sufficient space for the compass calibration.
 2. In the job menu, tap on .
 3. Open the "Steering calibration" menu with .
 4. Tap on "Compass".
- ➔ Compass calibration will be started.
5. Follow the instructions on the screen.



NOTE

The wheel angle sensor must not be calibrated for the AMAZONE Pantera self-propelled sprayer. For information on other vehicles, please contact AMAZONE.

The calibration angle must only be calibrated if "RTK" has been defined as the correction source, see page 61. "RTK" is a paid correction source and is not described in this operating manual. For more information on paid correction sources, please contact AMAZONE.



13.2


Calling up the steering status


CMS-T-000704-C.1

The steering status provides an overview of the conditions that must be fulfilled to be able to use automatic steering.





REQUIREMENTS

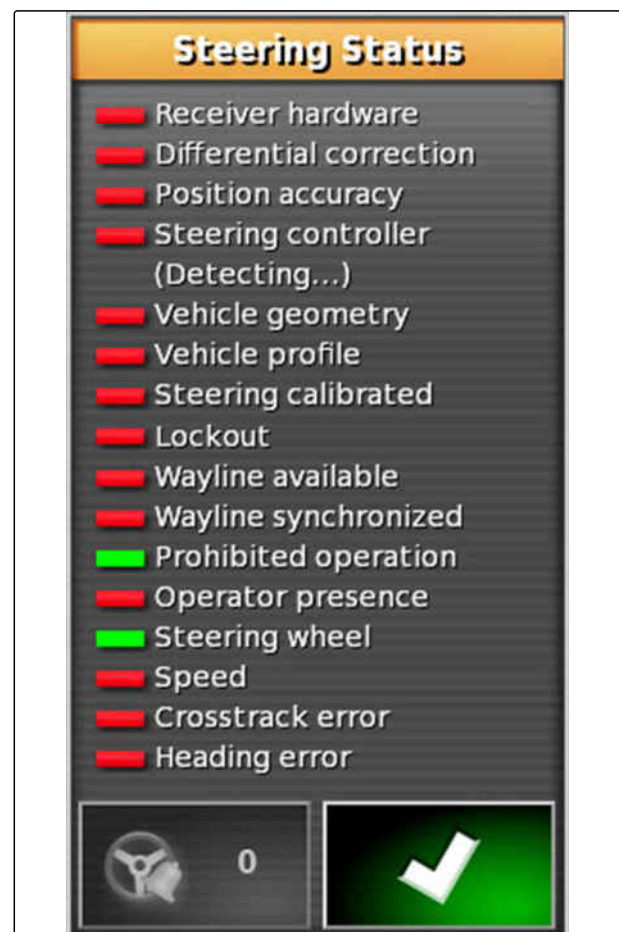
- ✓ The vehicle is at a standstill
- ✓ Automatic steering status window is enabled; see page 33
- ✓ Button for starting the automatic steering is red: 
- ✓ Vehicle with automatic steering is configured; see page 92
- ✓ Suitable GPS receiver is configured (AGI-3 or AGI-4); see page 57
- ✓ Automatic steering is enabled; see page 94

► In the operating menu, tap on 

or

In the Job menu, tap on  and .

➔ The "Steering status" will be opened.





CMS-I-000444

Red status display for:	Measure
Receiver hardware	Check whether the GPS receiver is properly connected, fastened and switched on.
Differential correction	Check whether the correction source was properly configured, see page 61.
Position accuracy	<p>Check the GPS data, see page 23</p> <ul style="list-style-type: none"> • The correction source must converge • Satellite data must have high precision • At least 4 satellites must be available • The correction source must match with the settings If the correction source is wrong: select the correct correction source, see page 61. <p>If trees, high-voltage lines or similar interfere with the reception, drive the vehicle into an open area.</p>
Steering control	<p>Check whether the steering controller is properly connected and switched on.</p> <p>Check whether the correct steering controller is selected in the setup menu, see page 92.</p>
Vehicle geometry	Check whether the vehicle geometry data is correctly entered, see page 87 or select the vehicle again, see page 90.
Vehicle profile	Check whether the vehicle geometry data is correctly entered, see page 87. Check whether the right vehicle is selected, see page 90.
Steering calibrated	Calibrate steering, see page 179.
Locking mechanism	Unlock the steering control on the vehicle.
Track line available	<p>Check whether a track line is selected, see page 167.</p> <p>Drive closer to the track line.</p>
Track line synchronised	<p>Check the connection to the GPS receiver.</p> <p>Load the track line again and wait until the track line is synchronised.</p>
Prohibited operation	Terminate all operations that are being executed on the AmaPad.
Operator presence	Sit on the driver's seat.
Steering wheel	Let go of the steering wheel.
Speed	Drive between 1 and 25 km/h.
Track deviation	Drive closer to the track line.
Heading error	<p>Calibrate the compass, see page 179.</p> <p>Drive onto the track line.</p>

13.3

Coordinating the automatic steering

CMS-T-000604-A.1

1. In the job menu, tap on .
2. Call up the "Steering coordination" menu with .



IMPORTANT

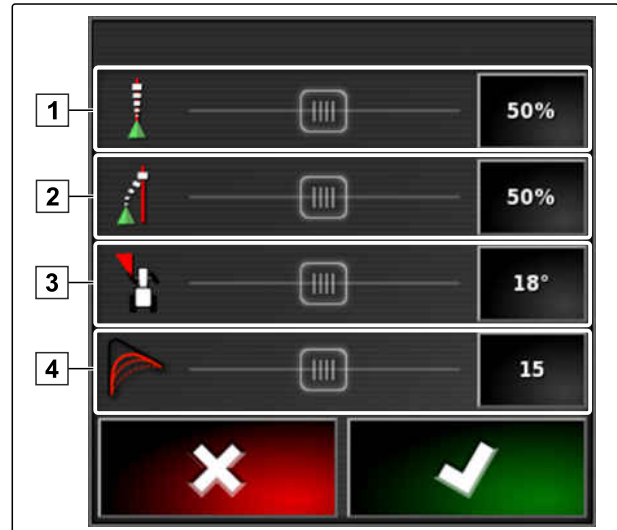
Risk of implement damage!


Because of the high setting values, the automatic steering reacts aggressively. This can cause damage to the coupled implement or the sprayer boom.

- ▶ Start by setting values for less aggressive steering reaction.
- ▶ Check the steering reaction.
- ▶ Increase the values in small steps.

Possible settings:

- 1 Track precision: The track precision defines how aggressively the automatic steering follows the track line.
- 2 Approach precision: The approach precision defines how aggressively the automatic steering steers towards the track line.
- 3 Maximum steering angle: The maximum steering angle defines how far the automatic steering can turn the steering.
- 4 Smoothing radius for curved track lines: The smoothing radius for curved track lines defines how precisely the automatic steering follows the curved track lines. With a low value, the curved track lines are followed more precisely and the curves remain sharp. With a high value, the curved track lines are followed less precisely and the curves are rounded.



3. Confirm the settings with .

13.4


Switching on the automatic steering

CMS-T-001557-C.1




REQUIREMENTS

- ✓ Vehicle with automatic steering is configured, see page 85
- ✓ Suitable GPS receiver is configured (AGI-3 or AGI-4), see page 57
- ✓ Automatic steering is enabled, see page 94
- ✓ Steering is calibrated, see page 179.
- ✓ All of the conditions for the steering status are fulfilled, see page 180
- ✓ Automatic steering coordinated, see page 183
- ✓ The vehicle is positioned on a track line

► In the operating menu, tap on .

➔ An alarm is issued.

➔ The automatic steering has been started.

➔ Button for starting the automatic steering turns green: 



NOTE

If the vehicle does not exhibit the desired driving reaction, the automatic steering can be coordinated again, see page 183.

13.5

Delayed automatic steering switch-on


CMS-T-000562-A.1

The automatic steering can be switched on with a delay to be able to accelerate the vehicle. When the required speed has been reached, the automatic steering is automatically switched on.

✓ REQUIREMENTS

- ✓ Vehicle speed below 2 km/h

1. Tap on  twice quickly.

→  flashes yellow-white.

2. Accelerate the vehicle.

→ When the vehicle has reached the required speed, the automatic steering will be switched on.

13.6

Switching off the automatic steering

CMS-T-000700-B.1


i NOTE

When all of the conditions for the steering status have not been fulfilled, the automatic steering will be switched off. For an overview of the conditions, see page 180.

There are 2 options for switching of the automatic steering:

► Turn the steering wheel by a few degrees

or

In the operating menu, tap on .

→ An alarm is issued.

→ The automatic steering is switched off.

Using the Universal Terminal

14

CMS-T-00000458-B.1


14.1

Opening the Universal Terminal

CMS-T-00000556-B.1

The Universal Terminal can be used to access the implement ECU. The user interface of the implement control is shown on the AmaPad and can be operated there.

The miniature view for the Universal Terminal can be found on function bar in the operating menu.

1. In the function menu, tap on .

NOTE

There may also be a symbol for the connected implement or the connected input device on the button in the function menu. Example with

fertiliser spreader: .

- ➔ The miniature view for the Universal Terminal will be opened.

2. Enlarge the miniature view.

NOTE

To configure the Universal Terminal, see page 80.



14.2

Enlarging the section in the miniature view

CMS-T-000815-A.1

The display of the Universal Terminal within the miniature view can be enlarged.

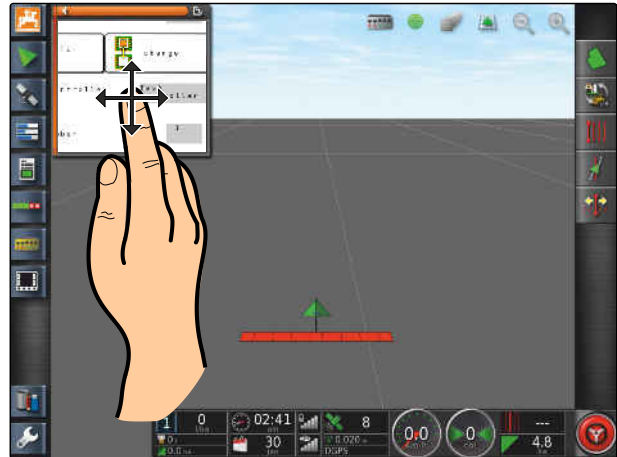
1. Double-tap on the miniature view.

➔ The selected area will be enlarged

2. *To move the section,*
swipe with your finger over the miniature view.

i NOTE

The Universal Terminal cannot be operated using the miniature view.



14.3

Using automatic AUX-N assignments

CMS-T-004499-C.1

When an implement or an external input device is connected to the AmaPad, the implement or the external input device automatically sends an AUX-N assignment for specific functions to the AmaPad.

i NOTE

The provided AUX-N assignments must be confirmed every time the AmaPad is started.

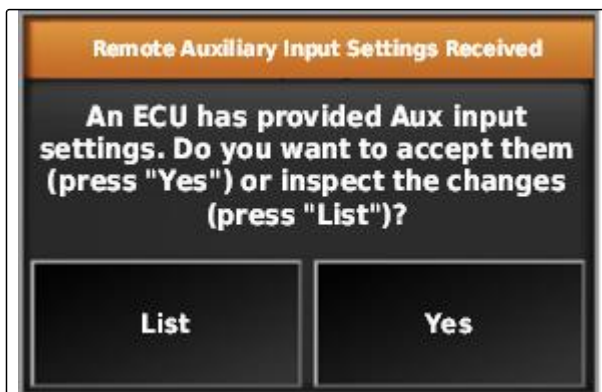
i NOTE

It can take up to 2 minutes for the implement or the external input device to send the AUX-N assignments.

When the AmaPad has been started and an implement or external input device is connected, a message is shown with the provided AUX-N assignments.

The following selection options are available:

- Accept the provided AUX-N assignments with "Yes"
- Change provided AUX-N assignments



1. If the provided AUX-N assignments should be changed, tap on "List".

➔ The list of the provided AUX-N assignments is opened on the Universal Terminal.



2. To change the AUX-N assignments, see page 189 .

3. To delete all AUX-N assignments, tap on .

14.4




Managing AUX-N functions

CMS-T-00000460-B.1

14.4.1 Opening the AUX-N assignments

CMS-T-00000461-B.1

The functions of the AmaPad and the connected implement can be executed using quick access buttons and using external input devices. For example, if an AmaPilot* is connected, the functions can be assigned with the buttons on the AmaPilot*.

1. Select  on the Universal Terminal.
→ The list of available functions will be displayed.
2. To filter the functions according to the implements,
select .
3. To assign a function,
select .

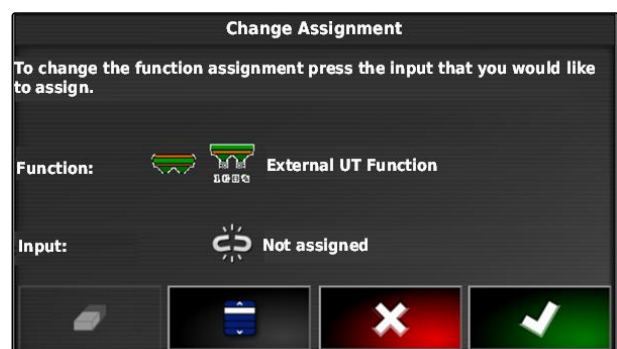


CMS-I-001504

→ The "Change assignment" menu will be opened.

The following options are available for the assignment:

- Assignment for external input device; see page 190
- Assignment for miniature view; see page 190
- Assignment through selection list; see page 191
- Delete assignment; see page 191



CMS-I-001223

Assignment for external input device

CMS-T-002579-A.1




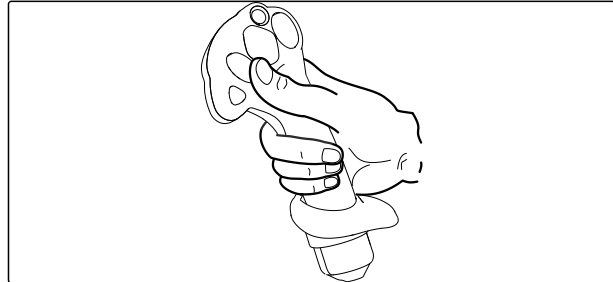
REQUIREMENTS

- ✓ External input device is connected
- ✓ External input device is loaded on the Universal Terminal

1. Press button on an external input device, e.g. + on the AmaPilot.

➔ The selected button will be assigned to the function.

2. Confirm assignments with .



Assignment for miniature view

CMS-T-002466-B.1



NOTE

The miniature view for the AUX input is only shown when an assignment is edited or assignments are already available.

- ▶ Select the desired button in the miniature view.

➔ The function is assigned to the selected button.



Assignment using selection list


CMS-T-002575-A.1

1. To open a list with the input options,

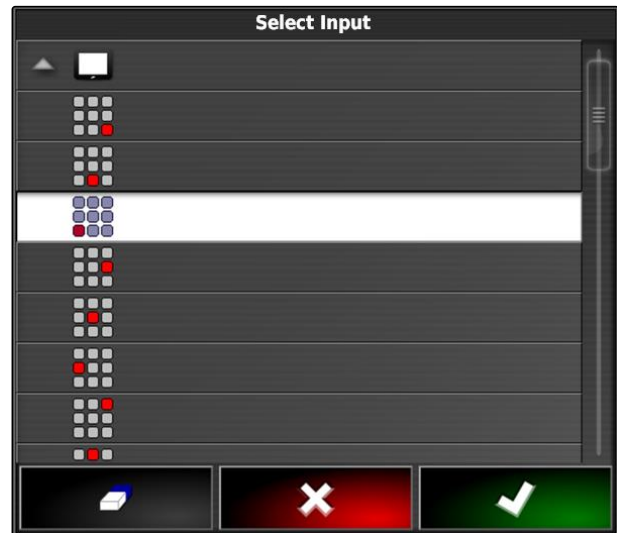
Select .

➔ The "Select input device" menu will be opened.

2. Select the input device from the list.
3. Select the button or the key for the assignment
or

Delete assignment with .

4. Confirm assignments with .




Deleting an assignment

CMS-T-002577-A.1

1. To delete the assignment,

Select .

2. Confirm with .

Using automatic reverse drive detection

15

CMS-T-000153-B.1


The automatic reverse drive detection determines whether the vehicle is driving in reverse. When reverse driving is detected, the vehicle symbol also moves backwards on the map. Without automatic detection of reverse driving, the vehicle symbol turns around when driving in reverse.



NOTE

Automatic detection of reverse driving must be enabled in the setup menu; see page 44.

1. Drive the vehicle in reverse.

➔ The button for automatic detection of reverse driving turns yellow: 

2. *When the direction of movement of the vehicle symbol does not concur with the direction of movement of the vehicle,*

tap on .

Using part-width section control

16

CMS-T-00000462-C.1

16.1

Using manual part-width section control

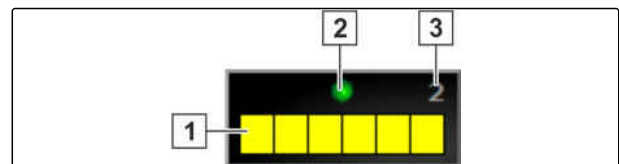
CMS-T-001507-C.1

Virtual section switches can be enabled for sprayers and seed drills. The virtual section switches can be used to switch individual part-width sections on and off.

The miniature view for manual part-width section control can be found on function bar in the operating menu. Alternatively, virtual section switches can be called up on the map in the map view.

Part-width section switch in the miniature view

- 1** Part-width section status: Red: Section is switched off, Yellow: Section is switched on and the application is stopped (generally by the automatic part-width section control). Green: Part-width section is switched on and the application is started. Orange: Part-width section is switched on and the application is stopped or the section is switched off and the application is started (generally by the switching delay)
- 2** Status of the section switch: Green: Section switch is on, Red: Section switch is off
- 3** Switch number



CMS-I-002411



CMS-I-002409


Part-width section switch in the map view

- | | |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|
| <p>1 Part-width section numbers</p> <p>2 Part-width section status: Red: Section is switched off, Yellow: Section is switched on and the application is stopped (generally by the automatic part-width section control). Green: Part-width section is switched on and the application is started. Orange: Part-width section is switched on and the application is stopped or the section is switched off and the application is started (generally by the switching delay)</p> | <p>3 Status of the section switch: Green: Section switch is on, Red: Section switch is off</p> |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|




REQUIREMENTS

- ✓ Virtual section switch is enabled and configured; see page 83
- ✓ Job is started; see page 123
- ✓ Automatic part-width section control is switched on; see page 195

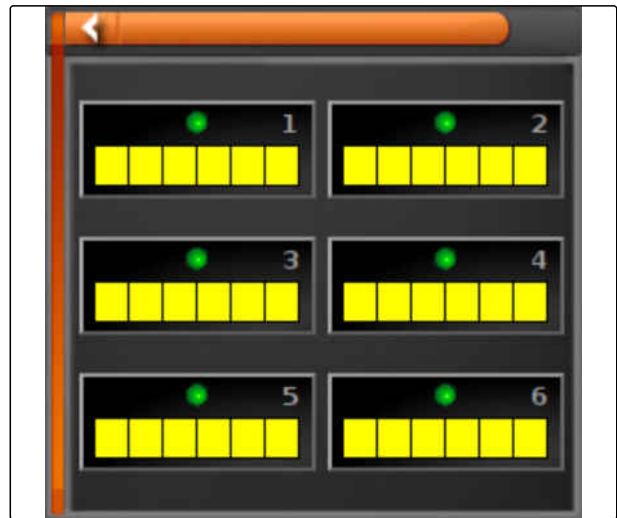
1. On the function bar, tap on .

or

In the map view, tap on .

- ➔ Manual part-width section control will be opened.

2. To switch the desired part-width section on or off:
Tap on the corresponding section switch.



CMS-I-002413

16.2

Using automatic part-width section control

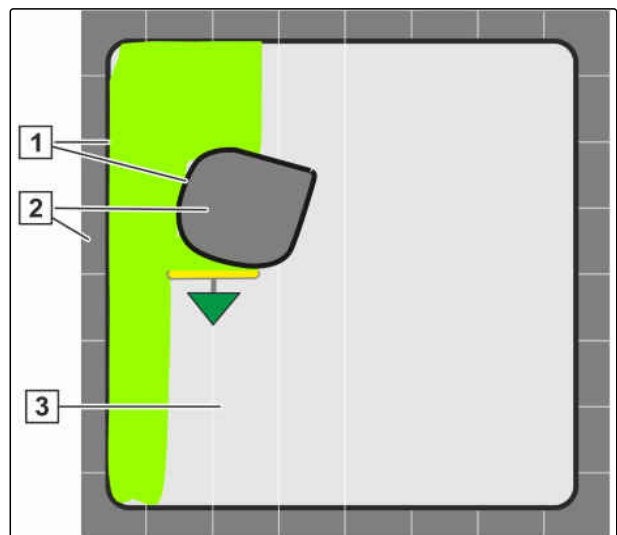
CMS-T-00002262-A.1

16.2.1 Using automatic part-width section control

CMS-T-001490-D.1

With automatic part-width section control, the implement sections are automatically switched off when the implement crosses a specific boundary or a worked area.

- 1 Boundary lines
- 2 Non-workable areas are shown in dark grey, e.g. exclusion areas
- 3 Workable areas are shown in light grey




CMS-I-001384



REQUIREMENTS

- ✓ Part-width section control is configured; see page 104
- ✓ Automatic part-width section control is enabled on the Universal Terminal; see operating manual for the implement control

1. In the function menu, tap on .

➔ Miniature view for the automatic part-width section control will be opened.

Possible settings:

"Control mode": Control mode is used to configure the overlap of the part-width sections.


"Limit value": The limit value is used to define the areas in which the part-width section are switched off.

"ASC ON": This button is used to switch the automatic part-width section control on or off.



CMS-I-000497

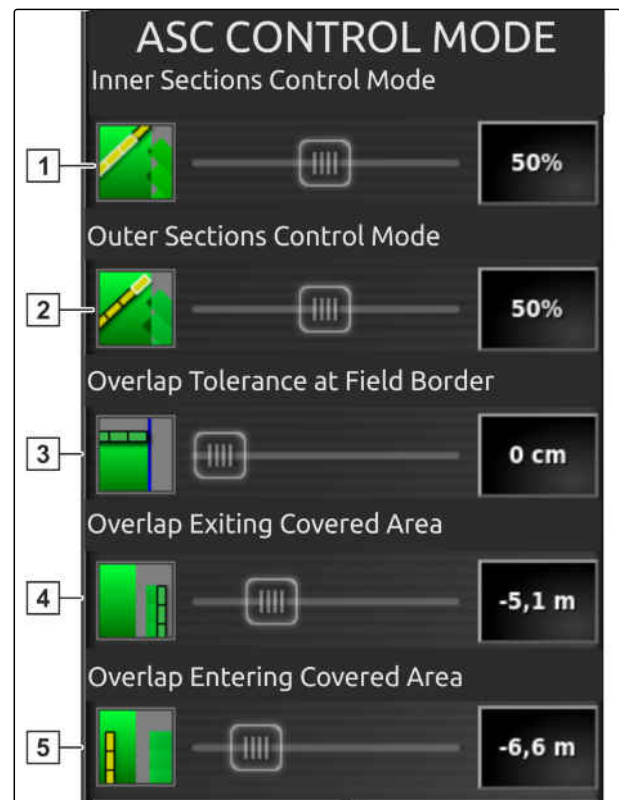
2. To configure the control mode,

select control mode  in the Function menu see page 197.

➔ The control mode ASC miniature view will be opened.

Possible settings:

- 1 "Control mode for the inner segments"
- 2 "Control mode for the outer segments"
- 3 "Overlap tolerance at the boundary line"
- 4 "Overlap when leaving the area"
- 5 "Overlap when driving in the area"



CMS-I-00002067

3. Enter the respective required values using the slider bar or on the numeric keypad.
4. To define the limit value, see page 201.
5. To switch the automatic part-width section control on or off, tap on "ASC".

16.2.2 Setting the automatic part-width section control

CMS-T-00002268-A.1

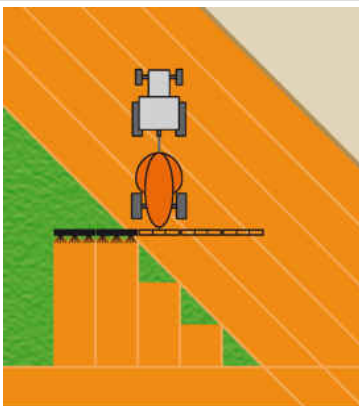
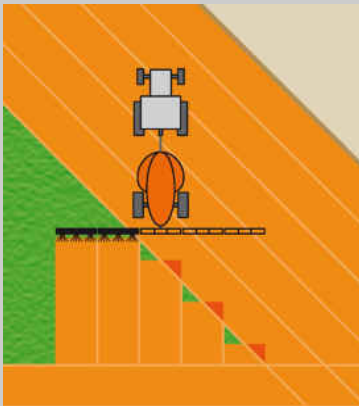
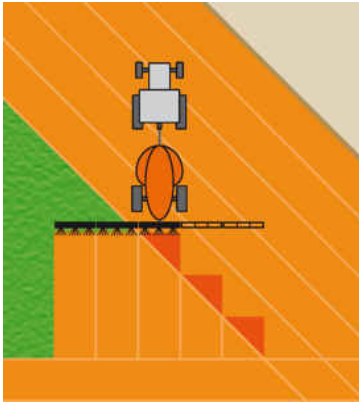
16.2.2.1 Configuring the control mode

CMS-T-00000463-B.1

Setting the control mode for the inner segments

CMS-T-003904-C.1

The inner sections control mode describes the overlap of the inner part-width sections. The overlap defines how far the part-width sections can protrude into the already worked areas before the sections are switched off.

Example settings	Explanation	Figure
0%	The part-width sections are switched off before any overlap occurs.	 CMS-I-001321
50%	The part-width sections are switched off when they half protrude into the worked area.	 CMS-I-001319
100%	The part-width sections are switched when they fully protrude into the worked area.	 CMS-I-001317

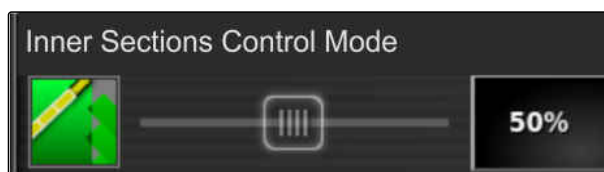
1. Tap on "Control mode".

➔ The "ASC control mode" menu will be opened.

2. Under "Inner sections control mode", set the percent value using the slide bar

or

Enter the percent value as a number.



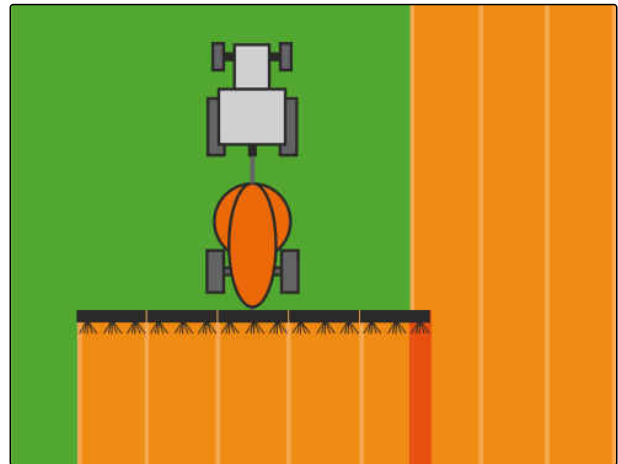
CMS-I-00002064

3. Confirm the settings with .

Configuring the outer sections control mode

CMS-T-003907-C.1

The outer sections control mode describes the overlap of the two outer part-width sections. The overlap defines how far the part-width sections can protrude into the already worked areas before the sections are switched off. Overlap prevents that the outer part-width sections are constantly switched on and off when they touch on worked areas during parallel driving.



CMS-I-000594

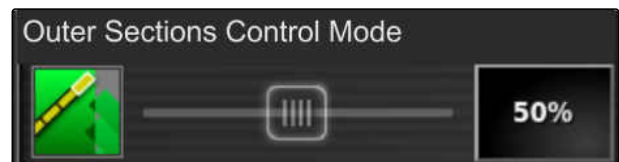
1. Tap on "Control mode".

➔ The "ASC control mode" menu will be opened.

2. Under "Outer sections control mode", set the percent value using the slide bar.

or

Enter the percent value as a number.



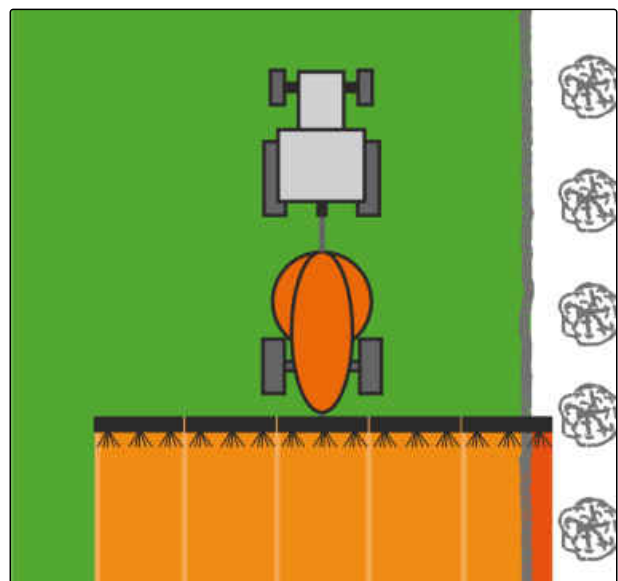
CMS-I-00002063

3. Confirm the settings with .

Defining the overlap tolerance at the boundary line

CMS-T-005171-D.1

The overlap tolerance at the boundary line defines how far the outer part-width sections can protrude over a boundary line before they are switched off. Overlap tolerance at the boundary line prevents the outer part-width sections from being constantly switched on and off when driving along and touching a boundary line.




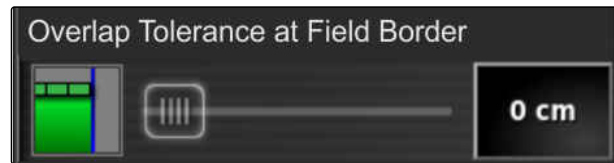
CMS-I-001467

1. Tap on "Control mode".

➔ The "ASC control mode" menu will be opened.

2. Under "Overlap tolerance at boundary line", enter the desired overlap tolerance in centimetres with the slider bar or as a number.

3. Confirm the settings with .



CMS-I-00002065

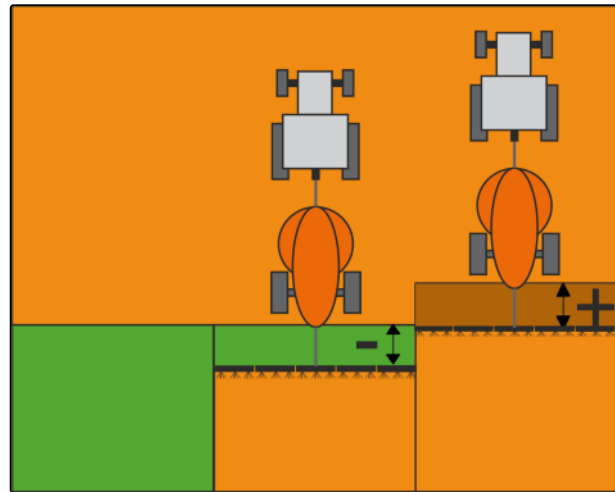
Overlap when driving in the area

In the ASC control mode Function menu, the "overlap when driving in the area" defines the distance from the worked area at which the part-width sections are switched off.

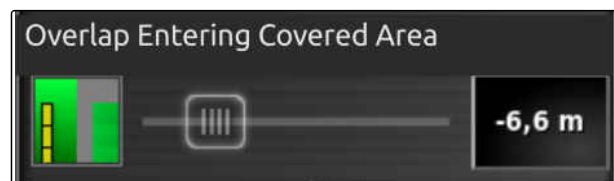
NOTE

The value entered in metres can be positive or negative.

- Positive value: Before the headland, the part-width sections are switched on within the worked area according to the entered distance. There is overlap.
- Negative value: Before the headland, the part-width sections are switched off outside of the worked area according to the entered distance, and there is a gap.



CMS-T-00002264-A.1



CMS-I-00002057

1. Select "Overlap when driving in the area" and enter the distance in metres using the slider bar.

or

Enter the required distance in metres on the numeric keypad.

2. Confirm the settings with .

Overlap tolerance when leaving the headland

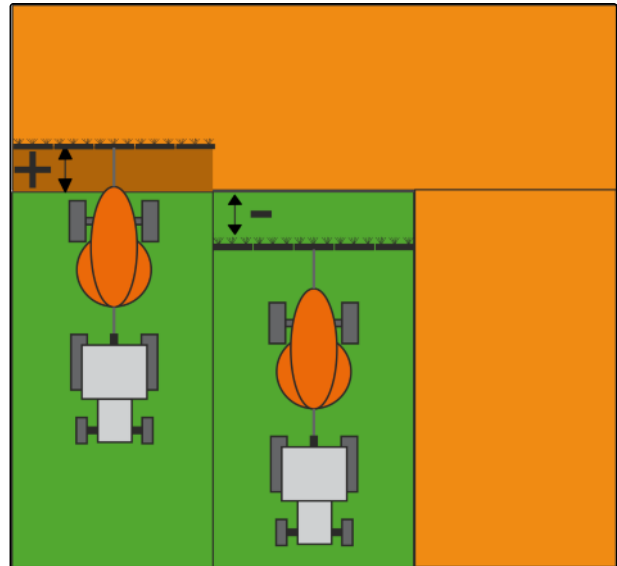
CMS-T-00002265-A.1

In the control mode of the automatic part-width section control Function menu, the "Overlap tolerance at the headlands" defines the distance from the worked area at which the part-width sections are switched off.

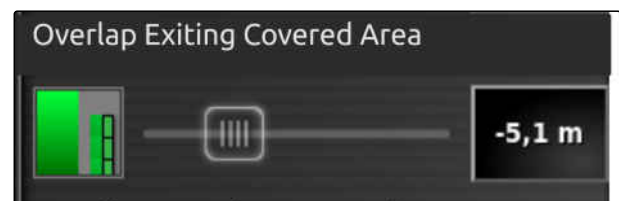
NOTE

The value entered in metres can be positive or negative.

- Positive value: After driving on the headland, the part-width sections remain switched on within the worked area according to the entered distance. There is overlap.
- Negative value: After driving on the headland, the part-width sections are switched off outside of the worked area according to the entered distance, and there is a gap.



CMS-I-00002059



CMS-I-00002058

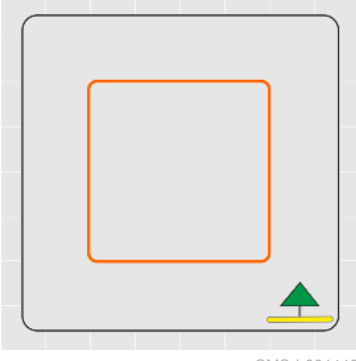
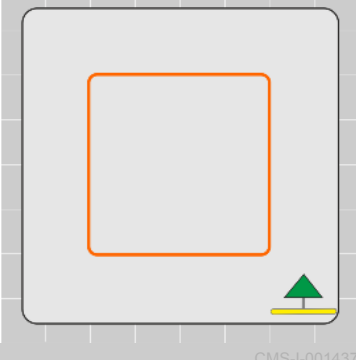
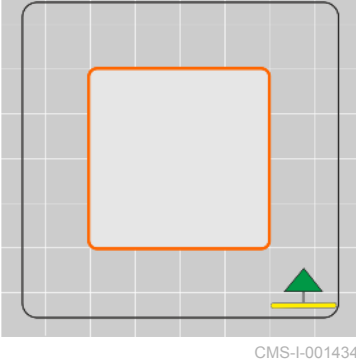
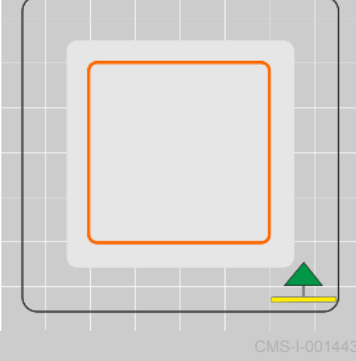
1. Select "*Overlap when leaving the area*" and enter the required distance in metres using the slider bar or numeric keypad.



2. Confirm the settings with .

16.2.2.2 Defining the limit value

CMS-T-000680-C.1

The limit value is used to define the areas in which the part-width section are automatically switched off. The possible settings are listed in the following table. The figures show the display in the map view on the AmaPad. The part-width sections remain switched on in the light grey areas, and are switched off in the dark grey areas.

Limit value	Explanation	Figure
Unlimited	<p>Only for sprayers and seed drills</p> <p>The part-width sections remain switched on in all areas outside of the worked area.</p>	 <p>CMS-I-001440</p>
Boundary line	<p>In areas outside of the boundary line, the part-width sections will be switched off.</p>	 <p>CMS-I-001437</p>
Headlands	<p>The part-width sections will be switched off inside the headlands.</p>	 <p>CMS-I-001434</p>
Safety zone	<p>Only for fertiliser spreaders.</p> <p>A safety zone is defined inside the boundary line. The width of the safety zone is half the working width. Inside the safety zone and outside of the boundary line, the part-width sections will be switched off.</p>	 <p>CMS-I-001443</p>

1. In the function menu, tap on .
- ➔ Miniature view for the automatic part-width section control will be opened.
2. Tap on "Limit value".
3. Select the limit value.
4. Confirm selection with .



CMS-I-000497


16.2.2.3 ASC on and off

CMS-T-00002269-A.1

Automatic part-width section control is switched on or off using the button in the Function menu.

NOTE

If the function is switched off, only manual part-width section control is possible.

1. In the function menu, tap on  .

➔ Miniature view for the automatic part-width section control will be opened.
2. Tap on "ASC ON".

➔ Automatic part-width section control will be switched on.



CMS-I-000497

Using rate control

17

CMS-T-00000464-D.1

17.1

Using a job with application map

CMS-T-000569-E.1

In a Farm Management Information System, jobs can be created containing application maps for the application rates or other site-specific settings. The jobs are processed and documented with the AmaPad.



REQUIREMENTS


- ✓ Job with application map is imported; see page 126
- ✓ Job with application map is selected; see page 129
- ✓ Job with application map is started; see page 123




NOTE

If the job data and the application map match with the connected implement, the application map is loaded automatically and the job can be processed.


On implements with multiple tanks, assignment can be performed manually.

1. *If the application map is not displayed,* perform the following steps:
2. In the Job menu, tap on .

3. Select the job with . The application map appears on the display.



CMS-I-00001227

4. With , call up the "Assign rate control" menu.

In the "Signal source" column, "TASKDATA" will be shown. This entry means that the application map from the selected job will be loaded.

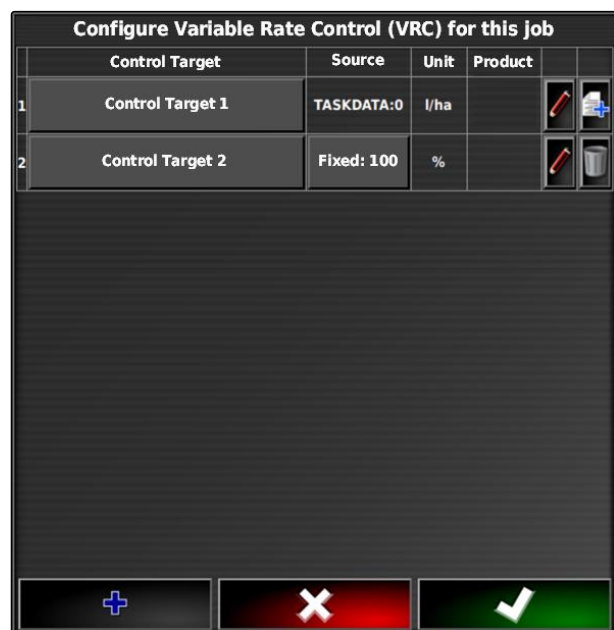
5. Check the values in the table.

? TROUBLESHOOTING

Are the values in the table incorrect?


The units in the job data do not match the implement.

1. Connect the correct implement.
2. Checking the implement configuration; see page 96
3. Revise the job data.



CMS-I-002666

6. To document the quantities of the used products or to configure fallback values: see page 215.

7. Confirm with .

➔ The application map will be loaded.

**NOTE**

For the application map to be properly displayed, the following conditions must be fulfilled:

- The "*Application map*" must be selected as the "*Coverage map*"; see page 220
- The controllable implement element must be selected as the VRC map; see page 222
- The coverage scale must be configured; see page 223

17.2**Adding an application map to a job (shape import)**

CMS-T-000573-D.1

Application maps in shape format containing application maps for application rates or other site-specific settings can be added to a created job. The application maps can come from a service provider, an app or an FMIS, and can be used for controlled spreading/application or other site-specific settings.

**REQUIREMENTS**

- ✓ The USB flash drive with the application maps in shape format is inserted into the AmaPad.

**NOTE**

Application maps must be created with the WGS-84 coordinate system.


Application maps consist of 3 files. All 3 files must be saved in the same folder on the USB flash drive:

- Geometry data file, file format: .shp
- Factual data file, file format: .dbf
- Attribute data file, file format: .shx

- ✓ Job is selected; see page 129

**NOTE**

If an application map has already be loaded for the job, a different job must be selected or created.

1. In the Job menu, tap on .
2. Call up the "Rate control assignment" menu with

**NOTE**

The application rate can be controlled as a percent value or using the units. The type of control can be read in the "Unit" column.

3. On the line with the desired unit, tap on the button in the "Signal source" column.
- ➔ A selection list for the signal sources will be opened.

Configure Variable Rate Control (VRC) for this job					
	Control Target	Source	Unit	Product	
1	Control Target 1	Fixed: 100	l/ha		 
2	Control Target 2	Fixed: 100	%		 


+
×
✓

CMS-I-002416

Possible selection:


- *"Use shape file directly"*: The application map in the shape file will not be saved in the job data.
- *"Convert shape file into ISO format"*: The application map will be saved in the job data and can be exported together with the job.

4. Select *"Convert shape file into ISO format"* or *"Use shape file directly"*.

5. Confirm with .

➔ The folder overview for the USB flash drive will be opened.

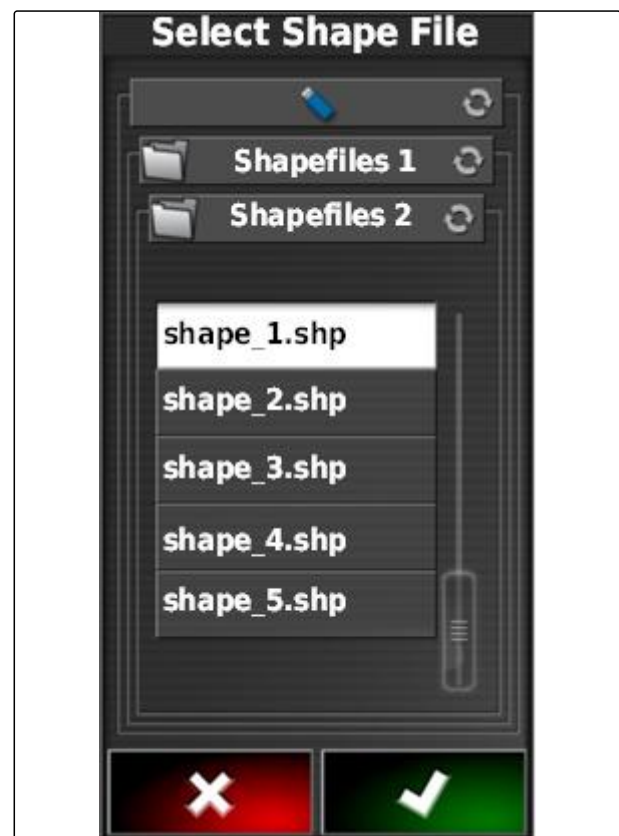
6. Select application map (shape file).

7. Confirm with .

➔ The contents of the shape file will be shown.



CMS-I-001639



CMS-I-001960


Adding an application map to a job (shape import)

Different application maps with different application rates can be saved in a shape file. The different application maps are called "Attributes".

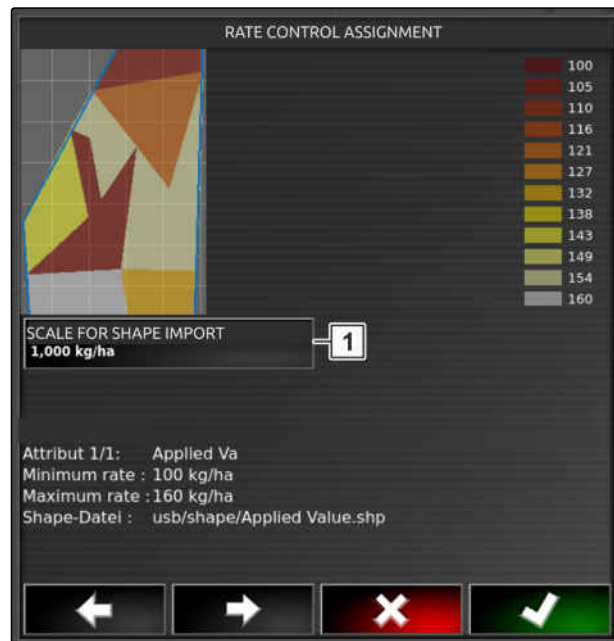
8. If necessary, the setpoint can be scaled per entry

1. The changes are shown in the coloured scale.

9. Select the desired attribute with the arrows.

10. Confirm with .

➔ The settings for variable rate control will be shown.



CMS-I-00002056

11. When the application map contains areas for which no application rate is defined, enter the value for a fixed application rate under "Setpoint" **1**.

12. enter the value for the rate that should be applied when the implement crosses the boundary line under "Out of field value" **2**.

13. enter the value for the rate that should be applied when the GPS signal is interrupted under "Position lost value" **3**.

14. When all of the application rates should be reduced or increased, enter the factor with which the application rate should be multiplied under "Scale for shape import" **4**.

15. To document the quantities of the used products or to configure fallback values:

confirm with .



CMS-I-000020564



NOTE

For the application map to be properly displayed, the following conditions must be fulfilled:

- The "Application map" must be selected as the "Coverage map".
- The controllable implement element must be selected as the VRC map.
- The coverage scale must be configured.

17.3

Defining a fixed setpoint for rate control

CMS-T-006706-C.1

A fixed setpoint can be defined for the application rate. This setpoint is transmitted to the implement and the implement is controlled accordingly.

1. In the Job menu, tap on .
 2. Call up the "Rate control assignment" menu with .
 3. Tap on the "Signal source" button in the column.
- ➔ A selection list for the signal sources will be opened.


Configure Variable Rate Control (VRC) for this job

	Control Target	Source	Unit	Product	
1	Control Target 1	Fixed: 100	l/ha		
2	Control Target 2	Fixed: 100	%		

+
×
✓

CMS-I-002416

4. Select "Setpoint".

5. Confirm with .


➔ The settings for variable rate control will be shown.



CMS-I-001639

6. Enter the desired setpoint for the application rate under "Setpoint".

7. To document the quantities of the used products:
see page 218

8. Confirm with .



CMS-I-001950

17.4

Configuring peer control for rate control

CMS-T-006703-C.1



The application rates can be measured and calculated by a sensor that is also installed on the vehicle and transmits geo-specific application rates or other site-specific settings to the implement.

NOTE

Peer control does not need to be reconfigured each time the job is changed. The last saved assignment will be automatically loaded.


✓ REQUIREMENTS

- ✓ TaskController version 4

1. In the Job menu, tap on .
 2. Call up the "Rate control assignment" menu with .
 3. Tap on the "Signal source" button in the column.
- ➔ A selection list for the signal sources will be opened.




CMS-I-002416

4. Select "Peer control".
 5. Confirm with .
- ➔ The "Select control source" menu will be opened.



CMS-I-001639

6. Select the sensor.

7. Confirm with .

➔ The settings for variable rate control will be shown.




CMS-I-001953

8. Under "Setpoint", enter the value for the rate that should be applied when the sensor does not transmit any data.

9. Under "Out of field value", enter the value for the rate that should be applied when the implement crosses the boundary line.

10. Under "Position lost value", enter the value for the rate that should be applied when the GPS signal is interrupted.

11. To document the quantities of the used products:
see page 215

12. Confirm with .

➔ The application map will be loaded.



CMS-I-001963

**NOTE**

For the application map to be properly displayed, the following conditions must be fulfilled:

- The "Application map" must be selected as the "Coverage map"; see page 220
- The controllable implement element must be selected as the VRC map; see page 222
- The coverage scale must be configured; see page 223

17.5**Receiving setpoints through the SCU-L adapter**

CMS-T-00001997-B.1

As an alternative to peer control, setpoints for rate control from a sensor can be received through an SCU-L adapter.

Baud rate: 9600 baud / LH5000 protocol.

The data will be transmitted to AMAZONE implements.

**REQUIREMENTS**

- ✓ A job must have been started!

17.6**Configuring rate control**

CMS-T-00000472-B.1

17.6.1 Documenting the product information

CMS-T-007003-C.1

The products used and the corresponding product quantities can be included in the job documentation. To do so, a list of products can be created when configuring rate control. Product information can also come from a Farm Management Information System and can be adjusted before starting work.

**NOTE**

The specification of the product quantity only serves for documentation purposes and does not affect the application rate.

1. Tap on the button in the *"Product"* column.
➔ The *"Select product"* menu will be opened.

Control Target 1


FIXED VALUE 100 kg/ha	OUT OF FIELD VALUE 100,0 kg/ha
POSITION LOST VALUE 100,0 kg/ha	SCALE FOR SHAPE IMPORT 1,000000%

Product Applied List

Product	Amount	Units
Product 1	1000000.00 (100)	kg (%)

At the bottom: [Red button with X] [Green button with checkmark]

CMS-I-001956

2. Select the product from the list
3. Confirm with .

Select: Product

FILTERS
Select filters

Product 1

Product 2

Product 3

At the bottom: [Pencil icon] [Plus icon] [Trash icon] [Red X button] [Green checkmark button]

CMS-I-002432


4. To add another product and therefore create a mixture,


select .

Control Target 1

FIXED VALUE 100 kg/ha	OUT OF FIELD VALUE 100,0 kg/ha
POSITION LOST VALUE 100,0 kg/ha	SCALE FOR SHAPE IMPORT 1,000000%


Product Applied List

Product	Amount	Units	
Product 1	1000000.00 (100)	kg (%)	
			

CMS-I-001956

17.6.2 Creating a product

1. In the "Select product" menu, select .

NOTE

Products belong to the master data. For more information on editing the master data, see page 122

CMS-T-007031-A.1

Select: Product



FILTERS
Select filters

Product 1

Product 2

Product 3








2. Enter a name for the product under *"Name"*.
3. Select or create a product group under *"Products"*.
4. Select the unit type under *"Units of measure"*.
5. Select the unit in which the product will be spread/applied under *"Measured value display"*.

NOTE

The *"Units of measure"* and *"Measured value display"* fields must be filled in.

6. Under *"Type"*, select *"Individual product"*.

7. Confirm with .

Create: Product

 Name: Product 1
 Products: None
Units: None
Value presentation: kg
Type: Single Product

✕
✓

17.6.3 Saving a mixture

CMS-T-007029-B.1

If several products were included in the list of used products, these products can be saved together as a mixture.

1. Select .

Control Target 1

FIXED VALUE 100 kg/ha	OUT OF FIELD VALUE 100,0 kg/ha
POSITION LOST VALUE 100,0 kg/ha	SCALE FOR SHAPE IMPORT 1,000000%

Product Applied List




Product	Amount	Units	
Product 1	1000000.00 (100)	kg (%)	
			+


✕
✓

2. Enter a name for the mixture under *"Name"*.
3. Select or create a product group under *"Products"*.
4. Select the unit in which the product will be spread/applied under *"Measured value display"*.
5. Select the unit type under *"Units of measure"*.

NOTE

The *"Units of measure"* and *"Measured value display"* fields must be filled in.

6. Under *"Type"*, select *"Temporary mixture"*.
7. To adjust the products in the mixture, select *"Mixture components"*.

8. Confirm with .

Create: Product


Name:
Product 1


Products:
None

Value presentation:
kg

Units:
None

Type:
Temporary Mixture

Mix Quantity:
1,000 l


Mix Components




17.6.4 Adding a mixture

CMS-T-007014-B.1

Created mixtures can be added to the list of used products.

1. Select .

Control Target 1


FIXED VALUE
100 kg/ha


OUT OF FIELD VALUE
100,0 kg/ha

POSITION LOST VALUE
100,0 kg/ha

SCALE FOR SHAPE IMPORT
1,000000%

Product Applied List




Product	Amount	Units	
Product 1	1000000.00 (100)	kg (%)	
			





2. Select a mixture from the list.



NOTE

Mixtures belong to the master data. For more information on editing the master data, see page 122

3. Confirm with .



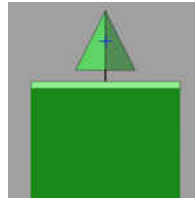
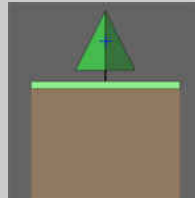
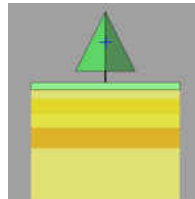
17.7


Selecting the coverage map

CMS-T-000559-C.1

The coverage map shows the worked areas, which can be marked on the map with different colours.

The following settings are available:

Coverage map	Description	Figure
Cover	Default setting. The worked area is shown in green.	 CMS-I-001017
GPS quality	Depending on the GPS quality, the worked area is shown in an orange tone. For this setting, a scale is shown on the map.	 CMS-I-001013
Application map or name of the implement control target	For this setting, variable rate control (VRC) must be configured. The coverage is then shown in different colours depending on the previously defined values. The implement control target is used as the name for this coverage map. For this setting, a scale is shown on the map.	 CMS-I-001015

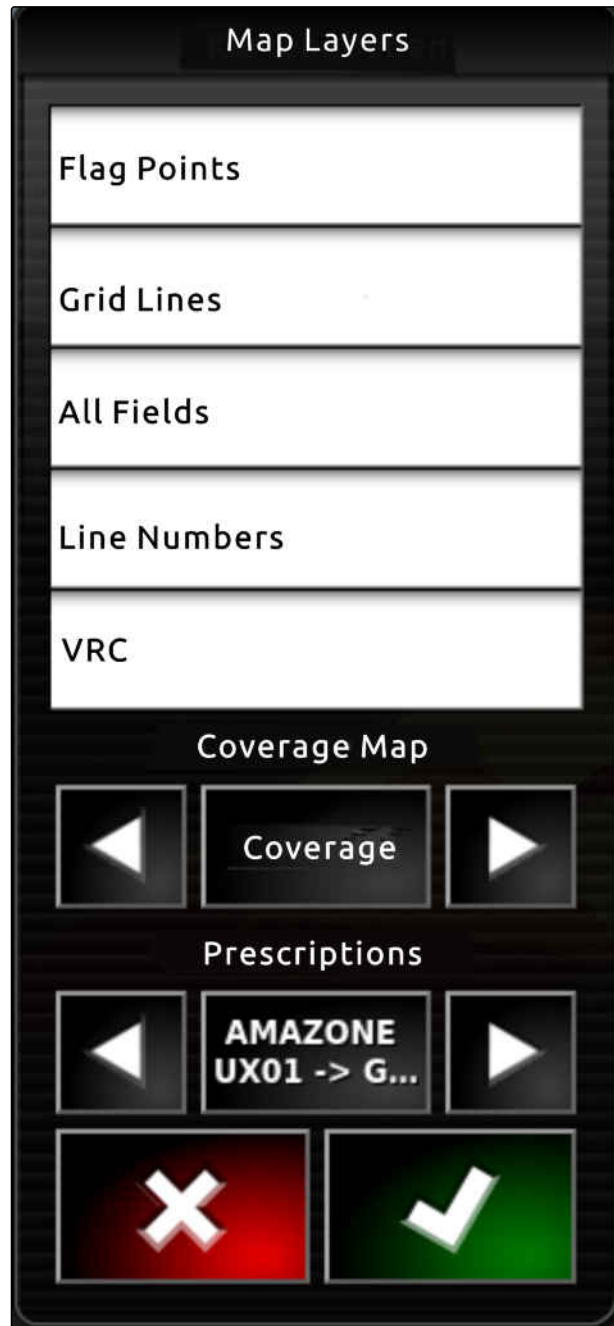
1. Open the "Map layers" menu with .
2. Under "Coverage map", select the desired coverage map with the arrows

or

To call up a selection list,
tap on the button between the arrows.

3. Confirm selection with .

➔ The selected coverage map will be shown.




CMS-I-002562

17.8

Selecting the VRC map

CMS-T-000820-B.1

The VRC map shows the previously defined rate that should be applied on the field.

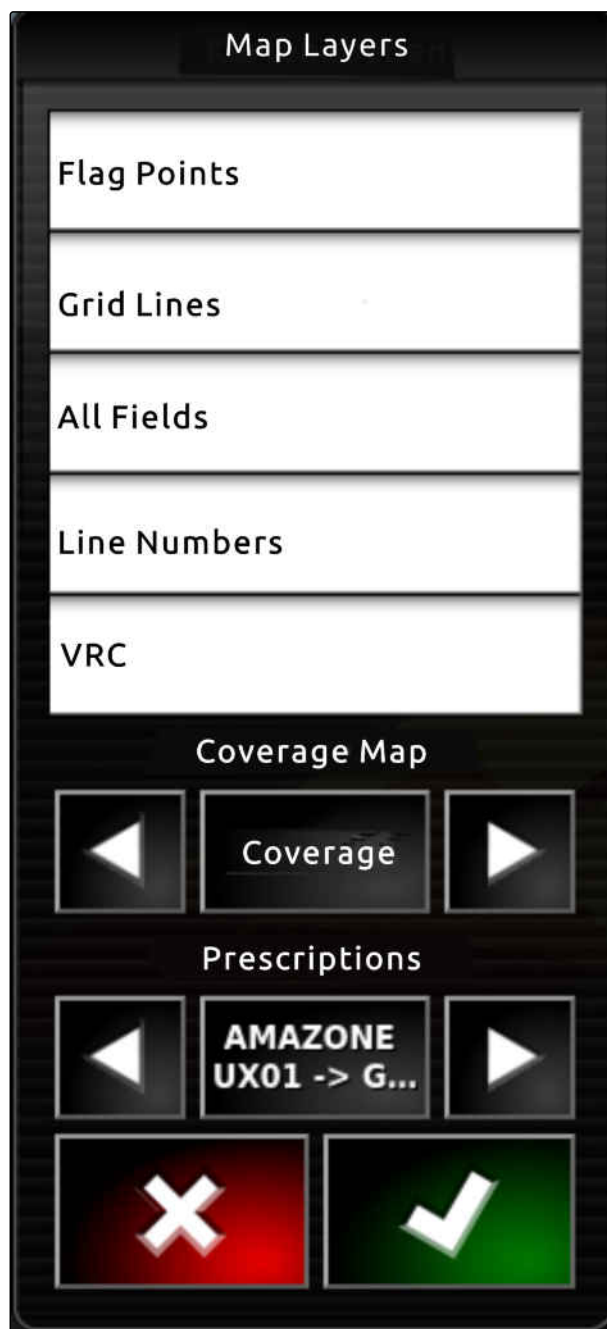
1. Open the "Map layers" menu with .
2. Under "VRC map", select the controllable element of the implement with the arrows.

or

To call up a selection list,
tap on the button between the arrows.

3. Confirm selection with .

➔ The selected VRC map will be shown.



CMS-I-002562

17.9

Configuring the coverage scale

CMS-T-00000465-B.1

17.9.1 Configuring the coverage scale manually

CMS-T-00000466-B.1

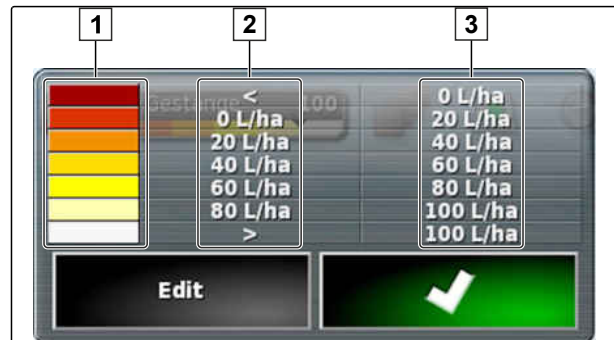
The following settings can be made for the coverage scale:

- Configuring the application rate ranges that should be shown on the map
- Defining the number of application rate ranges
- Defining the colours for the application rate ranges
- Defining the transparency of the displayed coverage

1. Open the overview for the coverage scale with

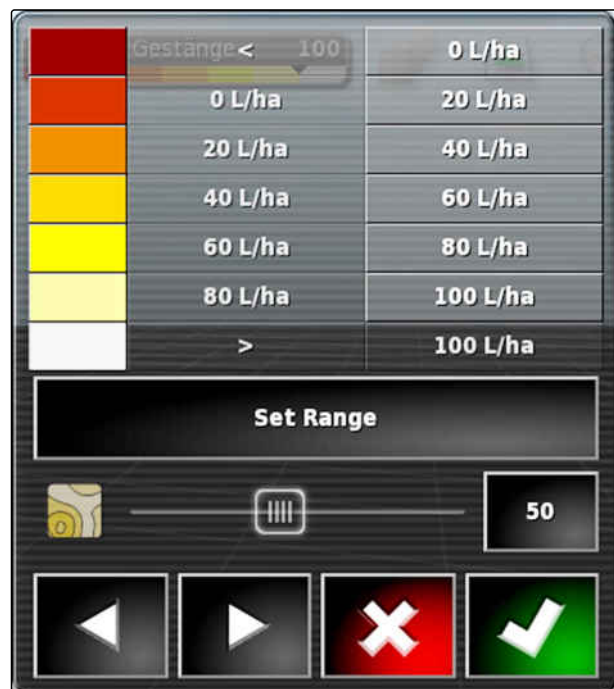



- 1 Colour for the application rate
- 2 Minimum value at which the application rate is shown in the corresponding colour.
- 3 Maximum value at which the application rate is shown in the corresponding colour.




2. Open the settings for the coverage scale with "Edit".

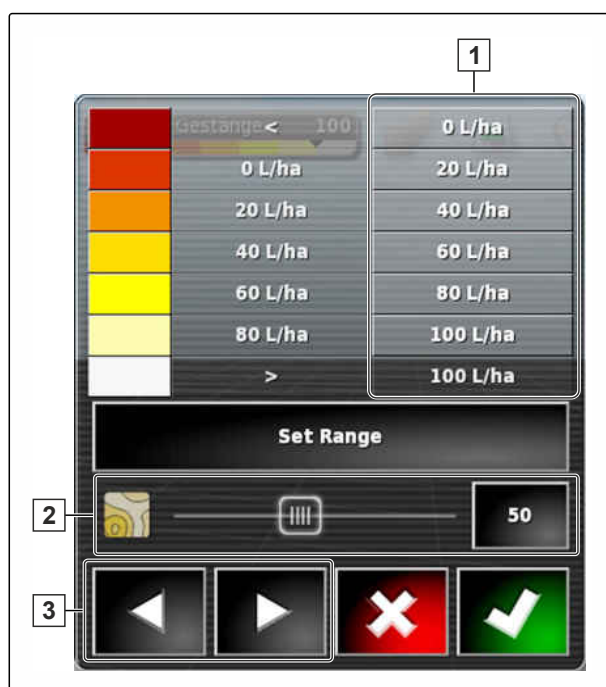
3. Tap on "Set range".



4. Select "*Minimum value*" to define the lowest scale value.
5. Select "*Maximum value*" to define the highest scale value.
6. Select "*Number of ranges*" to define the number of displayed colour ranges.
7. Confirm entries with .



8. Under **1**, define the maximum value at which the application rate is shown in the corresponding colours.
9. Under **2**, set the transparency of the coverage.
10. Under **3**, select the colours for the coverage.
11. Confirm the settings with .



17.9.2 Defining the application rate ranges based on the application rate

CMS-T-001631-B.1

The minimum and maximum values of the application rate scale can be defined based on the already applied quantity.



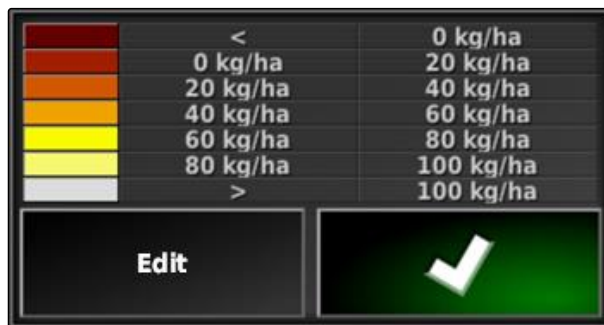
REQUIREMENTS

- ✓ A portion of the field must already be worked.

1. Open the overview for the coverage scale with

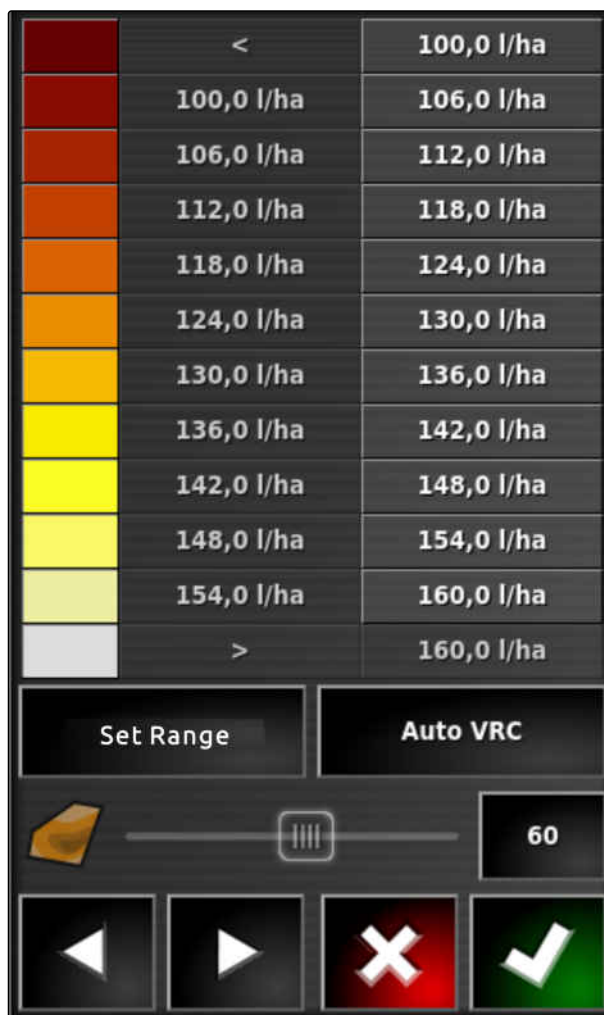


2. Open the settings for the coverage scale with "Edit".



CMS-I-001097

3. Adjust the scale ranges to the already applied rate with "Auto VRC".



CMS-I-001094

Rate control in the MiniView

18

CMS-T-00002009-B.1

18.1

Using rate control in the MiniView


CMS-T-00002010-B.1

Using the function key, it is possible to check or change the rate control for the current job using the MiniView.



NOTE

The function key and also the available data vary depending on the connected implement. As an

example: Function key for mounted spreader 

1. Open the Function menu with the function key in the MiniView.
2. In the Function menu, select the spreader size **1**. The number of displayed spreader sizes varies depending on the implement.



CMS-I-00002025



3. Select the data **2**. A selection window appears with all of the available data.



CMS-I-00001191

4. Call up the data.

Possible settings:

- "VRC": Rate control with application map
- "Auto": Either manual entry of the spread rate using the numeric pad or with the plus key  / minus key .
- The current value can be saved by pressing on the button for longer than 5 seconds.
- "ECU": Rate control takes place in the implement



CMS-I-00001190

5. Adjust the selection if necessary.

Managing inventory data

19

CMS-T-00000467-B.1


19.1

Using the inventory manager

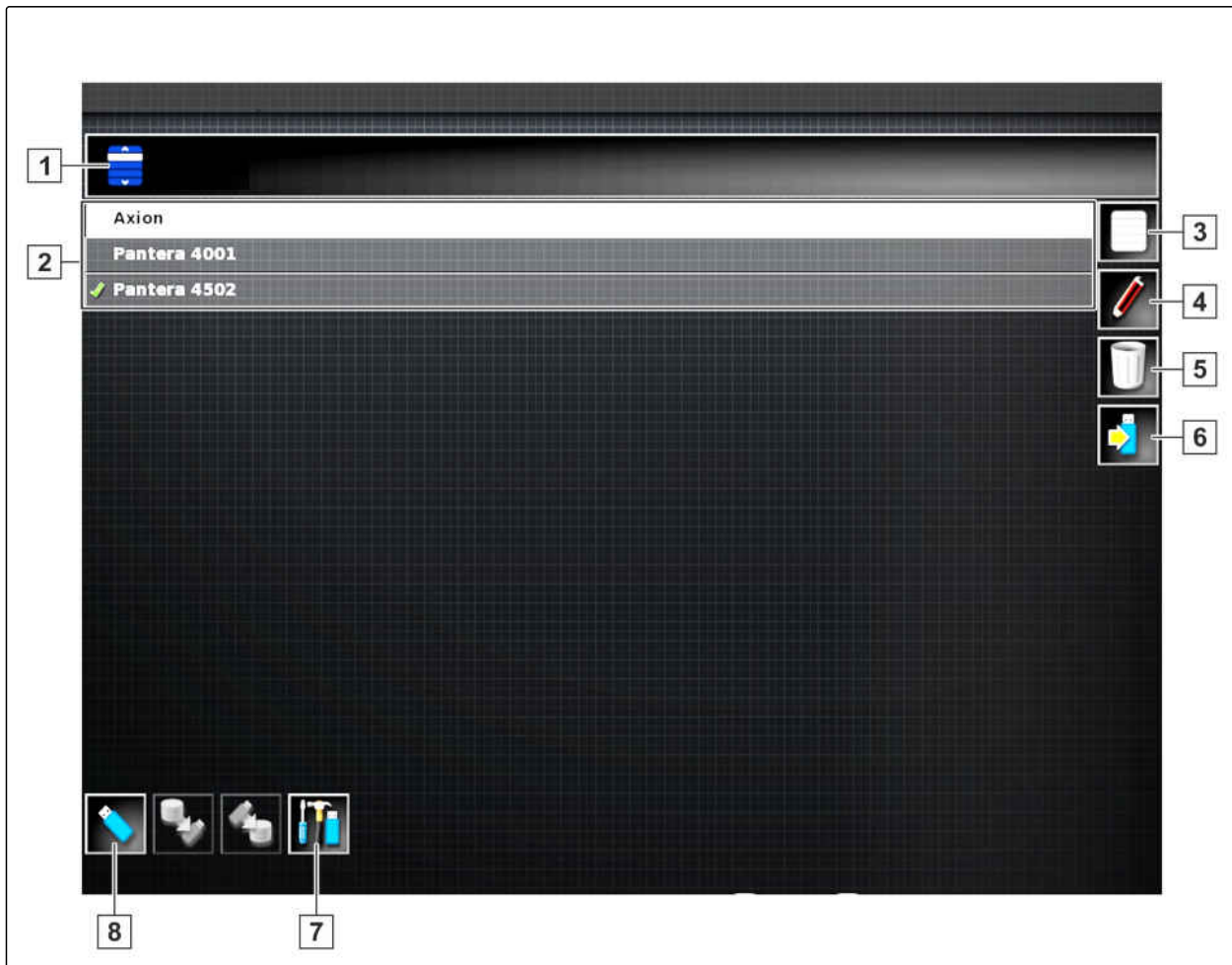
CMS-T-001472-A.1

In the inventory manager, the created inventory data can be managed.

The button for the inventory manager can be found on function bar in the operating menu.

► In the function menu, tap on .

➔ The inventory manager will be opened.



Overview of the inventory manager

- | | |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>1 Select category: Opens the selection list for the inventory data categories.</p> <p>2 Inventory data: Existing inventory data in the selected category.</p> <p>3 Select all of the displayed inventory data.</p> <p>4 Rename selected inventory data.</p> | <p>5 Delete selected inventory data.</p> <p>6 Export selected inventory data to the USB flash drive.</p> <p>7 Export diagnosis protocol to the USB flash drive. Diagnosis protocols are used by trained personnel for troubleshooting.</p> <p>8 Show inventory data on the USB flash drive. When the inventory data on the USB stick is shown, the background colour is blue.</p> |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|

19.2


Exporting job data backups

CMS-T-007033-C.1

When job data is exported to a USB flash drive, a job data backup is saved on the AmaPad at the same time. If the exported job data is lost, these job data backups can be exported again.

✓ REQUIREMENTS

- ✓ Exporting job data; see page 128
- ✓ USB flash drive is inserted

1. In the inventory manager, select "*Job data backup*" under "*Category*".
2. select .

Defining the camera view

20

CMS-T-00002007-A.1

20.1

Using the camera


CMS-T-00002008-A.1

During implement operation, digital cameras provide a better overview. The camera view can be displayed on the AmaPad.



REQUIREMENTS


- ✓ A license and additional hardware must be purchased for this function.
- ✓ Configure the camera, see page 78


1. To open the camera view,
select  in the Function menu.

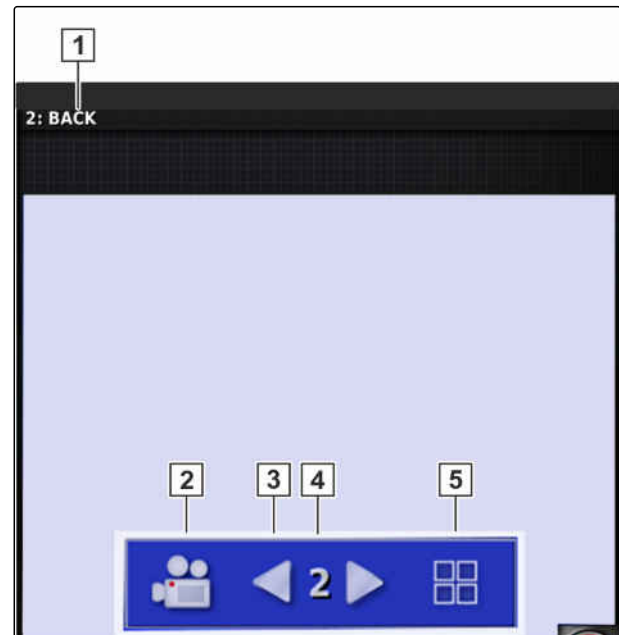
The camera view is opened. Assignment is possible using the configured names **1**.



NOTE

When the function  is selected once more, another camera view is opened.

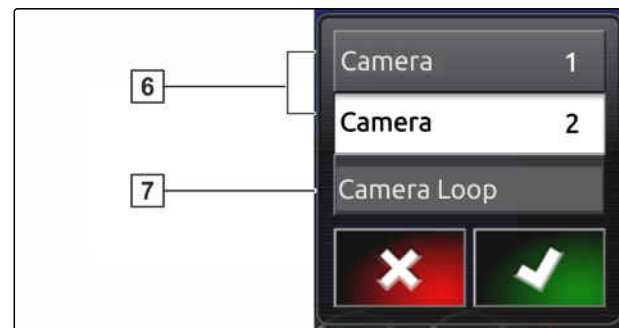
2. If you tap on the camera view, another Function menu appears.
3. With the  function **2**, a selection is opened:



CMS-I-00001180

6 Camera 1 and 2

7 Camera loop



CMS-I-00001183



NOTE

With the camera loop, the view changes automatically between the cameras after a defined interval.

4. After selecting the camera or camera loop, confirm.
5. With **3**, **4** and **5**, the selection of the camera view is also changed.

Using the global start screens

21

CMS-T-00000594-B.1

21.1

Saving the global start screen

CMS-T-000755-B.1

The multi-function button is used to save the display of the operating menu, to be able to call up the display again later. This makes the operation easier because the configured elements no longer need to be individually called up when the elements have been removed.



REQUIREMENTS

- ✓ Function is enabled in the setup menu; see page


1. Configure the elements in the operating menu as desired.
2. Press and hold the multi-function button for 2 seconds.
3. Tap on "Save start screen".
4. Enter the name.

➔ The global start screen is saved.

21.2

Managing global start screens

CMS-T-000757-B.1

1. Press and hold the multi-function button for 2 seconds.
2. On the desired start screen, tap on .

3. Enable the selected start screen

or

disable

or

delete.



NOTE

Disabled start screens cannot be selected.

21.3

Selecting global start screens

CMS-T-000753-C.1



NOTE

The selection procedure can be configured in the setup menu; see page 32.

Depending on the setting in the setup menu:

- Tap on the multi-function button until the desired start screen appears

or

Select the desired start screen from the menu.


Taking screenshots

22

CMS-T-00000557-B.1

An image of the displayed user interface can be saved to the USB flash drive.

1. Insert the USB flash drive into the AmaPad.
2. Call up the basic buttons, see page 11.

3. Tap on .

- ➔ The background of the user interface will briefly turn grey.
- ➔ The screenshot will be saved to the USB flash drive in the "Screenshots" folder.

Using remote support

23

CMS-T-00002090-B.1

With this function, the AmaPad can be remote-controlled through the Internet for maintenance or support purposes.



REQUIREMENTS

- ✓ Configure the WiFi, see page 50
- ✓ Internet connection is required

Establish a connection to the remote support in the Setup assistant, see page 40.

1. In the Setup menu, tap on *"User"* > *"Remote support"*.



CMS-I-00001899

2. Select the user name in the Setup assistant.



CMS-I-00001907

3. Establish a connection to the remote support with



4. Wait until the connection has been established and the driver has confirmed.

➔ It is now possible to work on the AmaPad with remote control.



NOTE

The connection can only be terminated by remote support after finishing the maintenance work!

Troubleshooting

24

CMS-T-00000495-C.1

24.1

Assigning error codes

CMS-T-00000468-C.1

Error messages have an error code. Using the error code, causes and measures can be found to fix the error.

- Read the measure for the error code from the table.

Error code	Error	Measure
U1052	Wrong firmware for the steering sub system.	Update the firmware; see page 58.
U1054	Steering sub system in error mode.	Switch the steering controller off and back on again.
U1055	The steering controller requires a reset.	Switch off the steering controller and the vehicle. Wait for 20 seconds. Switch the steering controller and the vehicle back on.
U1056	The steering controller is incorrectly configured.	Recalibrate the wheel angle sensor; see page 179
U1061	Parameter settings for the vehicle not found in the steering sub system.	Select the correct vehicle again; see page 90
U106 2	The alignment angle must be calibrated.	Calibrate the alignment angle; see page 179
U1065	The steering angle sensor must be calibrated.	Check the vehicle geometry; recalibrate the wheel angle sensor; see page 179.
U106 6	The compass must be calibrated.	Calibrate the compass; see page 179
U1067	New vehicle or new steering controller detected.	Recalibrate the compass; see page 179.

Error code	Error	Measure
U1068	The vehicle profile does not match with the settings of the steering sub system.	Check whether the steering sub system is switched on. Select the vehicle again; see page 90. Select the steering controller again; see page 92.
U1069	The steering angle sensor of the steering sub system is not configured.	Contact the dealer.
U1071	Average power output of the AES-25 exceeds the power limit.	Check whether the load on the AES-25 motor is too high (steering column stiff, bushes or bearings worn). Contact the dealer.
U1072	Temperature of the AES-25 exceeds the temperature limit.	Switch off the AES-25 and let it cool down. If the problem persists, contact the dealer.
U1074	The AES-25 steering controller was not initialised.	Turn the steering wheel manually by one-quarter turn.
U1075 - U1078	Reception interferences or sending interferences of the CAN signal.	Check all connectors and connections. Switch the connection box off and back on again. If the problem persists, contact the dealer.
U1079	The steering angle sensor is not connected.	Check the connections. If necessary, replace the faulty sensor. If the problem persists, contact the dealer.
U1080	Short-circuit on the steering angle sensor.	Contact the dealer. The sensor may have to be replaced.
U1082	CompactFlash file system has less than 1 % available memory.	Check the memory usage in the miniature view; see page 241. If necessary, delete or export data from the inventory manager; see page 229.
U3001	Data transfer failed.	Try to import or export again.
U4001	Error with the initialisation of the track line.	Create track line again; see page 155.
U4006	No valid system calibration available.	Calibrate steering; see page 179.

Error code	Error	Measure
U5001	Steering sub system was not detected.	<p>Check whether the steering sub system is switched on.</p> <p>Check whether the lock switch for road transport is disabled.</p> <p>Check whether the correct steering controller is selected; see page 92.</p>
U5002	Implement and track line are not defined.	<p>Select the correct implement again, see page 100.</p> <p>Check whether the correct field was added to the job.</p> <p>Select the correct job again; see page 129.</p> <p>Create new track line; see page 155</p>
U5003	Steering control could not be switched on because of the steering control lock.	Disable the lock switch for road transport.
U5004	No implement defined.	Select the correct implement; see page 100:
U5007	Row spacing (working width minus overlap of the implement) is too small.	Reduce the degree of overlap for automatic part-width section control; see page 195:
U6904	Only one steering controller, but vehicle type is articulated.	Check the vehicle configuration; see page 85.
U6905	Unknown implement type.	Check the vehicle configuration; see page 85.
U8505	No factory calibration.	Calibrate steering; see page 179.
TC8	Inertial sensor and modem are not supplied with 12 V voltage.	Check all connectors and connections.

24.2

Evaluating the LED display

CMS-T-00000496-B.1

On the front side of the AmaPad, there are two LED indicators at the top right. They show the battery status and power supply.

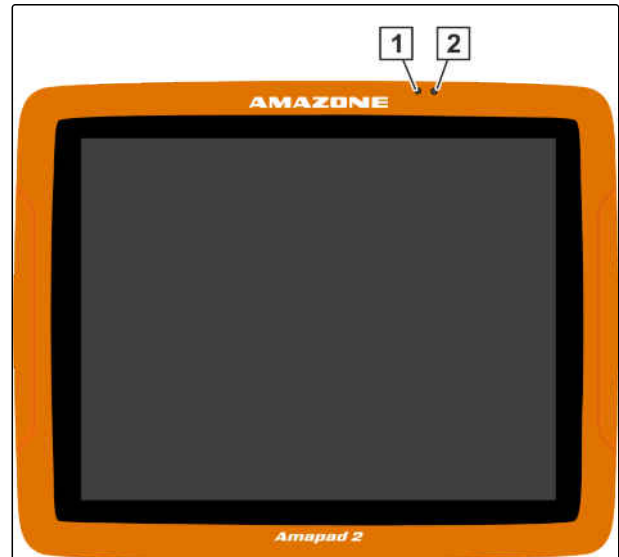


NOTE

When the right LED indicator **2** is green, the software of the AmaPad has started. If the power supply is interrupted, this LED indicator lights up red.

1 Battery status

2 Power supply




CMS-I-00000270

24.3

Calling up the system diagnosis

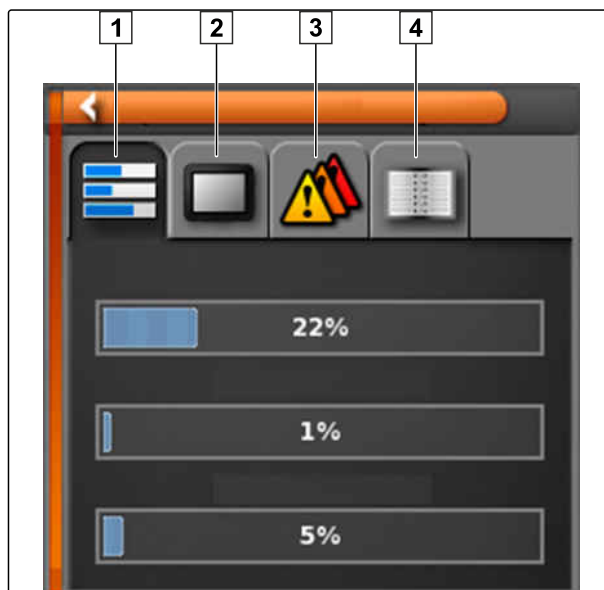
CMS-T-000844-B.1

In the function menu, there is a miniature view that provides information on the system properties of the AmaPad.

► In the function menu, tap on .

➔ The miniature view will be opened.

- 1 Memory usage
- 2 Console diagnosis
- 3 Fault codes
- 4 Protocol: In this tab, the "Configuration file" button can be used to load a configuration file from a USB flash drive.




24.4

Determining the software version

CMS-T-003910-A.1

In the function menu, there is a miniature view that provides information on the installed software version.

- In the function menu, tap on .
- ➔ The miniature view with the software information will be opened.

Indexes

25

25.1

GLOSSARY

CMS-T-000583-B.1

A

Application map

Application maps contain data that can be used to control an element of an implement. This data includes application rates or working depths.

Attribute

A shape file contains different values saved in columns of a table. These table columns are called attributes and can be individually selected. For example, different application rates for a product can be saved in a shape file.

Alignment angle

Describes the position of the receiver during installation.

AUX

AUX stands for "Auxiliary" and refers to an additional input device, e.g. a multi-function stick.

B

Baud rate

Data transfer rate, measured in bits per second.

Boundary line

Virtual line on the map on the AmaPad. Boundary lines are used to mark an area, which can then be defined as a work area or an exclusion area.

C

Correction source

Correction sources are the different systems used to improve and correct the GPS signal.

Control parameter

The control target refers to the controllable element of the implement. On a field sprayer, the spray pressure controller can be defined as a controllable element, which then regulates the application rate.

E

ECU

ECU refers to the implement control that is installed in the implement. The implement control can be accessed using control panels to operate the implement.

EGNOS

European Geostationary Navigation Overlay Service. European system for satellite navigation correction.

F

Farm Management Information System

A Farm Management Information System, or FMIS for short, is a program for managing agricultural operations. Such programs can be used to manage jobs and master data.

Firmware

A computer program that is permanently embedded in a device.

G

GPS drift

GPS drift is defined as the deviations of the GPS signal that result from the use of correction sources with low precision. GPS drift can be recognised when the vehicle symbol on the AmaPad no longer corresponds to the actual position of the vehicle.

GLONASS

Russian global navigation satellite system

H

HDOP

(Horizontal Dilution of Precision) Measurement for the precision of the horizontal position data (longitude and latitude) that is sent by the satellites.

I

Inventory data

Inventory data is managed in the inventory data manager.

The inventory data includes the following data:

- Vehicle data
- Implement data
- Track lines
- Water conservation projects
- Geo-ID files
- Job data backups

M

MSAS

Multifunctional Satellite Augmentation. Japanese system for satellite navigation correction.

Master data

The master data includes the following data:

- Customer data
- Farm data
- Worker data
- Field data
- Product data
- Crop data
- Comment templates
- Measures

R

RTK

Paid system for the correction of satellite data.

S

shape file

The shape file saves geometry information and attribute information in a data set. The geometry information forms shapes that can be used as boundary lines. The attribute information is required for the applications, e.g. to control the application rate. The shape file is in ".shp" format.

T

TASK.XML

The TASK.XML is a file that contains data on the jobs.

U

Universal Terminal

The Universal Terminal can be used to display the user interface of the ECU on the AmaPad.

25.2

INDEX

A

A-B line	
<i>Creating the straight line</i>	156
<i>Manual creation</i>	157
Additional button configuration	
<i>on the Universal Terminal</i>	189
Alarm	
<i>End of row</i>	77
Alarm tone	32
Application map	220
Application map, using	205
Application rate scale	22
Assistant	16
Automatic reverse drive detection	
<i>Button</i>	17
Automatic steering	
<i>Button</i>	17
<i>calling up the status</i>	180
<i>configuring status window</i>	33
<i>enabling status window</i>	33
<i>steering calibration</i>	179
<i>switching off</i>	185
<i>switching on</i>	184
AUX controller	
<i>confirming the assignment</i>	187
AUX-N function configuration	
<i>on the Universal Terminal</i>	189

B

Backup	229
Boundary area	
<i>defining</i>	144
Boundary line	
<i>creating</i>	137
<i>creating from coverage</i>	141
<i>creating with a shape file</i>	140
<i>deleting individually</i>	144
<i>editing</i>	144
<i>interrupting the recording</i>	140
<i>recording</i>	137

Boundary line recording	
<i>interrupting</i>	37, 37
Boundary lines	
<i>deleting</i>	149
Brightness	
<i>adjustment</i>	12
<i>Mode</i>	12
Buttons	
<i>change size</i>	34
Button tones	32

C

Camera	
<i>configuration</i>	78
<i>Using the camera</i>	233
Confirm selection	22
Connections	74
Control box	195
Coordinate grid lines	115
Correction signal setup	61
Coverage map	
<i>Select</i>	220
Coverage scale	
<i>configuration</i>	223
Cover	
<i>Changing the colour</i>	37
<i>see "Coverage map selection"</i>	220

Created track lines	
<i>re-using</i>	167
Creating turning manoeuvres	165
Curved track line	
<i>creating</i>	159
<i>Creating an adaptive line</i>	162

D

Dashboard	
<i>Dashboard configuration</i>	117
<i>GPS data</i>	24
Data backup	229

Decimals, changing the separator	26
Decimal separator, changing	26
Digital operating manual	4

E

ECU	
<i>configuration</i>	102
<i>refreshing the settings</i>	102
End of row	
<i>Issuing an alarm</i>	77
Exclusion area	
<i>creating</i>	137
<i>defining</i>	144
Exclusion area recording	
<i>interrupting</i>	37

F

Field boundaries	
<i>deleting</i>	149
Field boundary	
<i>creating</i>	137
<i>creating from coverage</i>	141
<i>creating with a shape file</i>	140
<i>deleting individually</i>	144
<i>editing</i>	144
<i>interrupting the recording</i>	140
<i>recording</i>	137
Field	
<i>creating</i>	136
Fields	
<i>showing or hiding</i>	115
Flag point	
<i>custom</i>	150
<i>editing</i>	153
<i>for GPS drift correction</i>	151
<i>for hazards</i>	149
Flag points	
<i>configuration</i>	78
<i>showing or hiding</i>	115

Function menu	17
---------------------	----

G

GPS data	
<i>on the dashboard</i>	24
GPS drift	
<i>correcting</i>	172

<i>correction with flag point</i>	173
<i>options</i>	172
<i>setting flag point</i>	151

GPS receiver	
<i>battery operation</i>	59
<i>Select</i>	57
<i>Set the baud rate</i>	61
<i>Updating the firmware</i>	58

GPS	
<i>calling up information</i>	177
<i>Input</i>	74
<i>Output</i>	75
<i>output configuration</i>	74
<i>selecting correction source</i>	61
<i>Speed simulation</i>	109

H

Headlands configuration	145
Help	
<i>Button designation</i>	12
<i>Job helper mode, enabling</i>	45
<i>Quick start</i>	52

I

Implement	
<i>automatic detection</i>	96
<i>creating</i>	99
<i>deleting</i>	229
<i>selection</i>	100
Implement control	
<i>see ECU</i>	102

Implement data	
<i>importing</i>	101

Implement profile, creating	96
-----------------------------------	----

Inputs	74
--------------	----

Inventory data, managing	229
--------------------------------	-----

ISOBUS	
<i>ECU detected</i>	96
<i>implement detection</i>	96

J

Job data backup	229
-----------------------	-----

Job data file	126
---------------------	-----

Job data	
<i>exporting</i>	128
<i>importing</i>	126

247

Remote support <i>using</i>	237	TC number <i>defining</i>	82
Reverse drive <i>automatic detection</i>	44, 192	Terminal <i>switching on</i>	9
RTK <i>configuration</i>	68	Terms of use	9
RTK NTRIP <i>configuration</i>	70	Track deviation <i>checking with dashboard</i>	170
RTK NTRIP for AM53 <i>configuration</i>	72	<i>checking with lightbars</i>	169
S		Track guidance <i>Activating automatic steering</i>	49
Scale <i>configuration</i>	223	<i>Activating tramlines</i>	47
Screenshots, taking	236	<i>Enabling ISOBUS tramline control</i>	48
SCU-L adapter	215	<i>Enabling track line on field boundary</i>	47
Setting the date	27	Track lines <i>Adaptive track lines, creating</i>	162
Setting the time	27	<i>Checking the track deviation with lightbars</i>	169
Setup menu <i>Basic operation</i>	25	<i>Checking the track deviation with the</i> <i>dashboard</i>	170
shape file <i>for boundary line</i>	140	<i>correcting</i>	175
Shortcut configuration <i>on the Universal Terminal</i>	189	<i>Creating a straight A-B line</i>	156
Signal <i>for the master switch</i>	108	<i>Creating the A-B line manually</i>	157
<i>for the part-width sections</i>	108	<i>Curved track lines, creating</i>	159
<i>for the tank switch</i>	108	<i>deleting</i>	229
Software upgrade	84	<i>nudging by a specified length</i>	175
Speed	109	<i>nudging in increments</i>	175
Speed simulation	109	<i>nudging to the vehicle position</i>	176
Starting application <i>see Starting a job</i>	123	<i>Re-using track lines</i>	167
Steering status <i>calling up</i>	180	<i>saving</i>	177
System 150 file transfer	33	Tramlines, creating	164
T		U	
Task Controller <i>Defining the number</i>	82	Universal Terminal <i>Defining the number</i>	80
TASKDATA.XML	126	<i>Pool cache, deleting</i>	81
		<i>using</i>	186
		Updating the firmware <i>GPS receiver</i>	58
		Upgrade	84
		User access level <i>changing</i>	38
		<i>protecting with password</i>	38
		User access levels, definition	39
		User controls	39
		User settings <i>Date</i>	27
		<i>Regional measuring units</i>	27
		<i>Time</i>	27

249

