



**AMAZONE**



# **Orientation Aid for the Start of the Season**

## **ZG-TS 01**

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# 1. General information

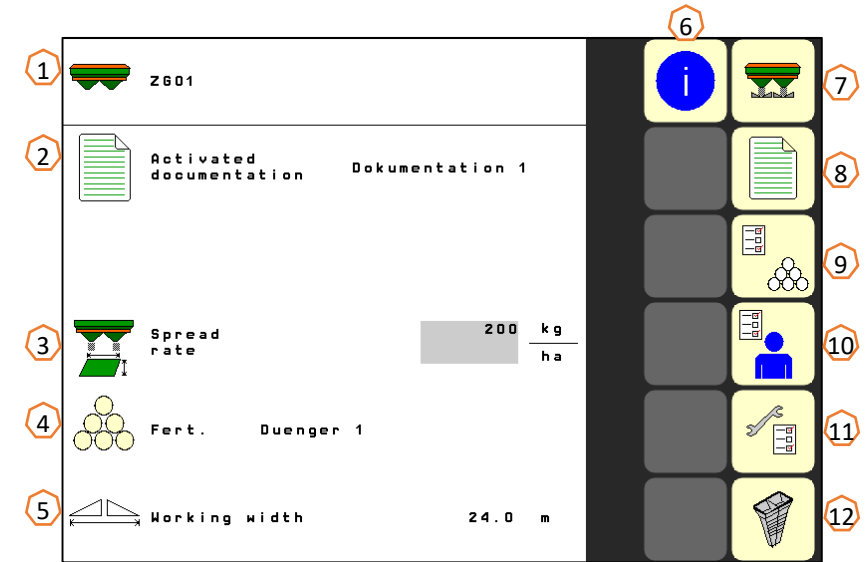
- Use of this document requires that the **operating manuals** for the implement and the software have been **read** and **understood**. The corresponding documents are shown on the right side.
- For this reason, it is **necessary** to take additional information from the operating manual. The **operating manual** must **always be available** when performing the orientation aid for the start of the season with the **ZG-TS 01**.
- The **Orientation Aid for the Start of the Season - ZG-TS 01** document serves as a guideline for the user to check the implement for the new season and to put it back into operation. This document is based on software version **NW188-F** and is also only valid for this version.



## 2. Start screen of the implement software

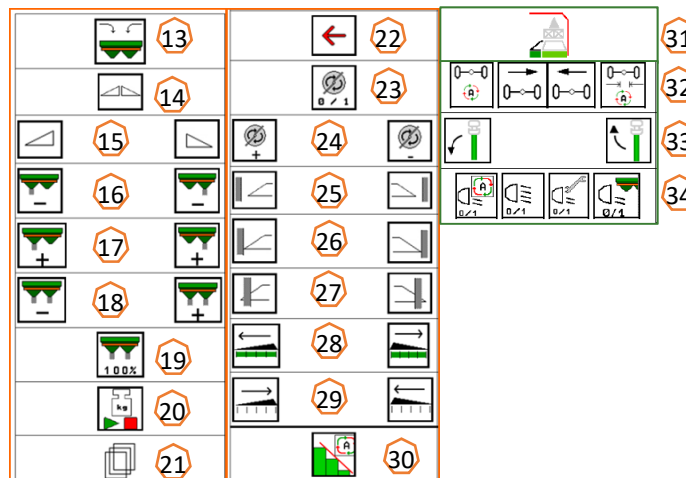
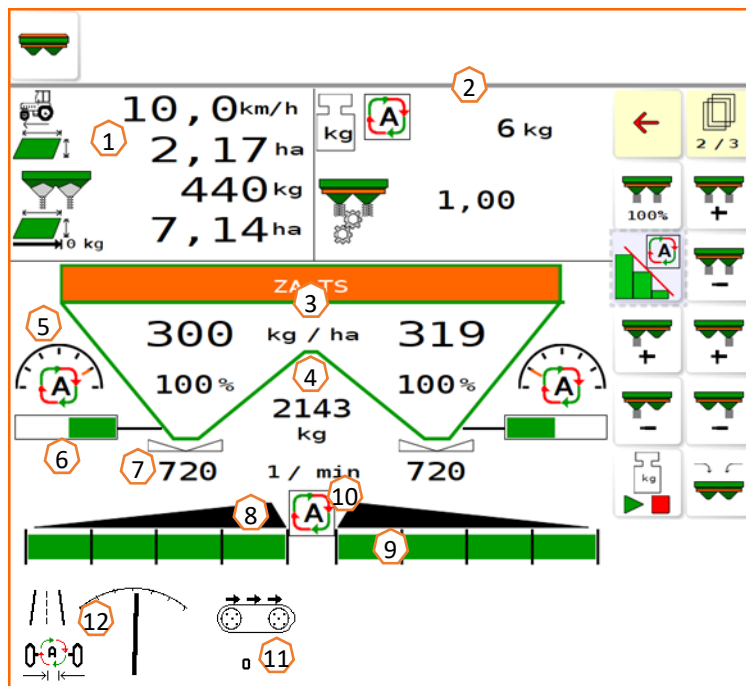
The user can reach the other screens directly from the start screen.

- (1) Machine type
- (2) Activated job from the internal job management. This field is empty if data exchange with a Task Controller is configured.
- (3) Spread rate. This value can also be automatically changed by the Task Controller or by other setpoint generators, moreover, this value is the 100 % basis for rate control in the Work menu
- (4) Activated fertiliser from the fertiliser database
- (5) Working width of the activated fertiliser from the fertiliser database
- (6) Info screen
- (7) Work menu
- (8) Internal job management
- (9) Fertiliser database
- (10) User menu
- (11) Implement settings
- (12) Mobile test rig





### 3. Work menu of the implement software



- (1) Multi-function display (freely configurable, see operating manual for more information)
- (2) Display for the scale / selection window (scale, steering system, WindControl, FlowControl)
- (3) Current absolute and percent spread rate (always 100% of the values on the Start screen), highlighted in yellow if the spread rate deviates by more than 10% or if a percent change has been made
- (4) Weighed hopper content, is highlighted in yellow when the alarm limit has been undercut (can be configured in the Implement menu, see operating manual)
- (5) Position of the delivery system (when using ArgusTwin)
- (6) Opening of the metering shutter
- (7) Spreading disc speed, is highlighted in yellow if the deviation is > 50 rpm from the nominal speed (fertiliser database)
- (8) Main part-width section switch (black is open, white is closed)
- (9) Part-width section status (green is open, white is closed)
- (10) Section Control status
- (11) Belt speed
- (12) AutoTrail status

- (13) Fill spreader
- (14) Open/close shutter on both sides
- (15) Open/close shutter left / right
- (16) Reduce the spread rate on the left / right
- (17) Increase the spread rate on the left / right
- (18) Increase / reduce the spread rate on both sides
- (19) Set the spread rate to the target quantity (100 %) on both sides
- (20) Calibration run in offline mode of the scale
- (21) Turn to the next page
- (22) Back the the Start screen
- (23) Switch on the spreading disc (only with hydraulic drive, press and hold until the acoustic signal is muted)
- (24) Increase / reduce the boundary spreading speed
- (25) Switch ditch spreading on / off on the left / right
- (26) Switch boundary spreading on/off on the left / right
- (27) Switch border spreading on/off on the left / right
- (28) Switch on part-width sections on the left / right
- (29) Switch off part-width sections on the left / right
- (30) Switch Section Control on/off
- (31) HeadlandControl on the headlands
- (32) AutoTrail steering axle automatic/manual, slope counter-steering, centre position
- (33) Lift / lower WindControl sensor
- (34) Work lights

## 4. Preparation for operation

### Required tractor equipment

**Tractor engine power:** above 90 kW

**Tractor pump capacity:** drive with load sensing system, constant flow system is also possible without steering system, depending on the hydraulic equipment.

Oil supply from the tractor and auxiliary pump without steering system:  
Requirement **60 l/min** > hybrid drive without steering system

Oil supply from the tractor and auxiliary pump with steering system:  
Requirement **85 l/min** > hybrid drive with steering system

Oil supply only from the tractor and without steering system:  
Requirement **105 l/min** > Hydro drive without steering system

Oil supply only from the tractor and with steering system:  
Requirement **130 l/min** > Hydro drive with steering system

**Connections:** depending on the implement equipment, the following connections are required:

- 2x DA: cover tarpaulin, jack
- 1x pressure-free return flow T (max. 5 bar)
- 1x pressure line P (max. 210 bar)
- 1x load sensing control line

### Coupling the implement:

Couple the implement with the towing device of the tractor. Take the hydraulic connections, universal joint shaft, lighting system, brake lines as well as the ISOBUS plug from the respective parking positions **(1)** and couple to the tractor.

If a yaw rate sensor is used on the implement side, it is mandatory that it is connected to the tractor.



## 5. Implement settings

### Layout and function of the spreading disc

- (1) Coloured marking of the spreading vane unit
- (2) Markings on the spreading vanes
- (3) Marking on the telescopic boundary spreading vane

### Selection of the spreader units:

TS 10, TS 20, TS 30

TS1, TS2, TS3

### Selection of the telescopic boundary spreading vane:

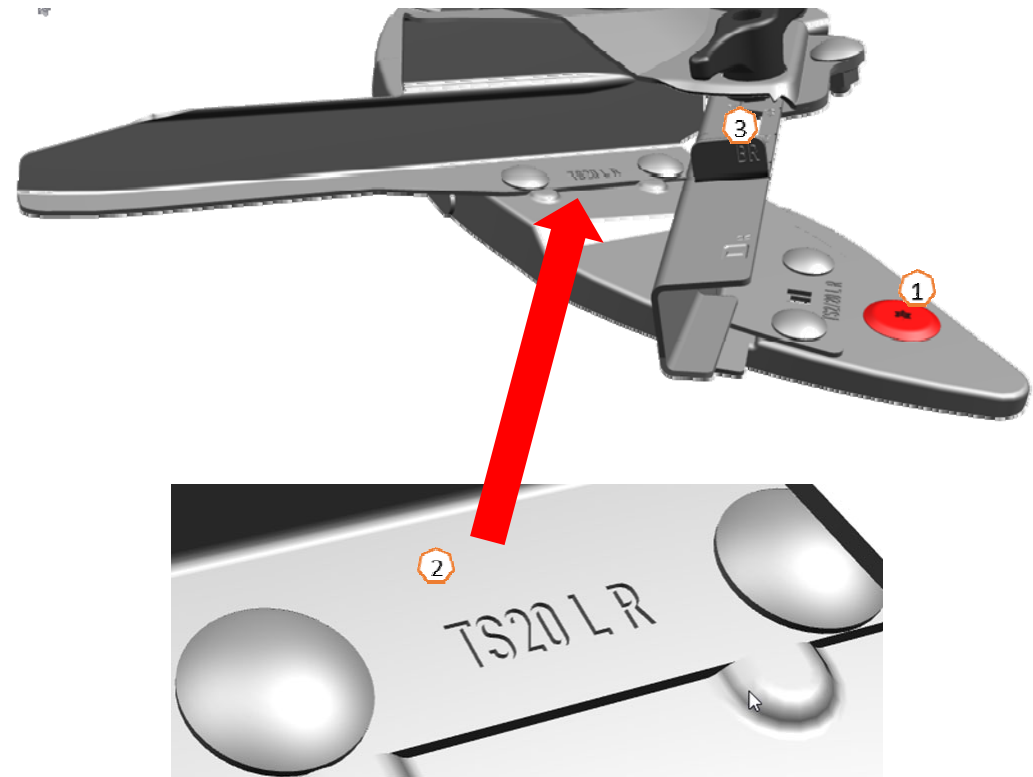
A, A+, B, C, D

### Adjustment range according to the setting chart:

- 1, 2, 3
- x - no telescope

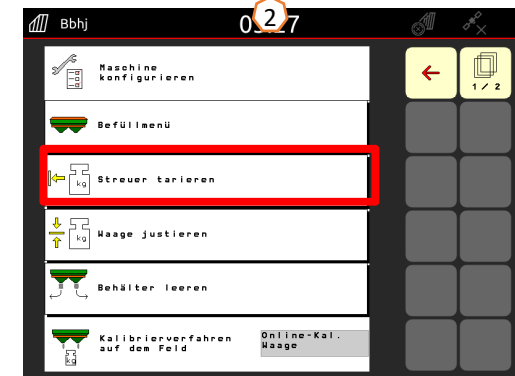
### The lateral distribution system is adjusted through the delivery system via an electric actuator.

- Actuator automatically moves to the desired position.
- Desired position is entered on the terminal according to the setting chart.



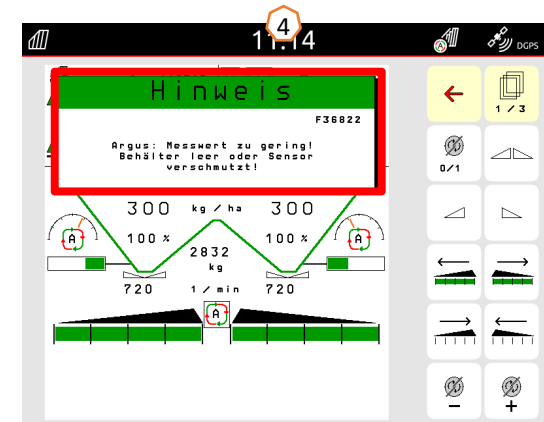
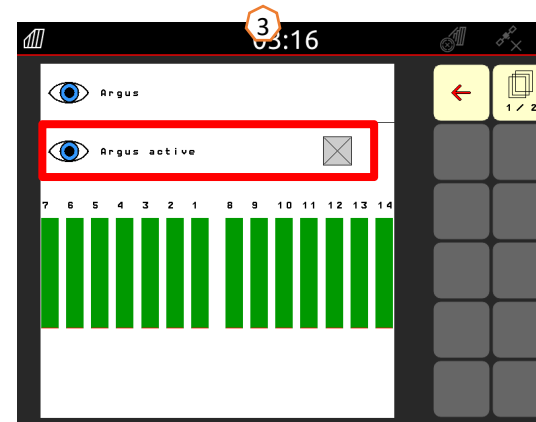
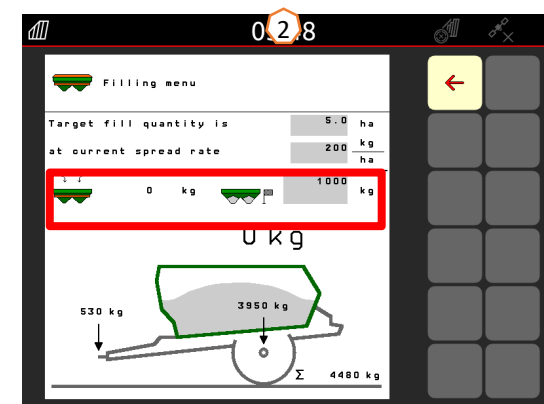
## 6. Software settings

- **(1) Speed source / teach-in pulses per 100 m:** **Implement settings > Speed > Teach-in pulses.** Here, the source for the speed can be selected or the pulses per 100 m can be calibrated.
- **(2) Tare spreader:** **Implement settings > Tare spreader** Taring of the fertiliser spreader serves to determine the weight of the spreader with 0 kg hopper content, e.g. after installing special equipment.
- **(3) Adjusting the scale:** **Implement settings > Adjust scale** Adjusting the fertiliser spreader serves to correct the scale when the hopper is filled. Adjustment is necessary if the hopper content is incorrectly displayed after filling.
- **(4) Spreader maintenance:** **Implement settings > Spreader** Maintenance required for convenient changing of the spreading disc units TS10, TS20, TS30.
- **(5) Parabolic switching:** **User menu > Arrange part-width sections as a parabola** Due to the kidney shape of the spread pattern, the part-width sections are now shown in Section Control in a similar shape of a parabola and are switched accordingly. **Prerequisite:** the terminal must support this function.
- **(6) HeadlandControl:** **User menu > HeadlandControl** Spreading is concentrated towards the inside of the field, so that the transition area between the headland and inside of the field becomes even more uniform. **Prerequisite:** the terminal must support this function.



## 6. Software settings

- **(1) FlowControl:** Implement settings > Calibration method. The calibration factor is continuously recalculated via FlowControl torque recording. The required shutter position is adjusted online. The measured values are referenced over a longer period of measurement with the weighing technology.
- **(2) Filling menu:** Work menu or Implement settings > Filling menu. The flashing spread fan lighting indicates that the target fill level has almost been reached during the filling procedure. 1000 kg below target fill level: slow flashing. 200 kg below target fill level: rapid flashing. Target fill level reached: constantly lit.
- **(3) Argus:** Implement settings > Argus. Constant monitoring of the throw direction of the fertiliser over the entire throwing range of the fertiliser. The current throw direction of the fertiliser is compared to the TARGET throw direction and the delivery system is automatically adjusted if necessary. The TARGET throw direction is taken from the setting chart and determined using the mobile test rig or EasyCheck. The throw direction depends on the fertiliser properties, working width, spreading vane unit and spreading disc speed.  
**Note:** AMAZONE also recommends that the sensors be cleaned **(4)** at regular intervals (ideally during every filling procedure). This can be done within seconds e.g. with a hand brush each time the spreader is filled.



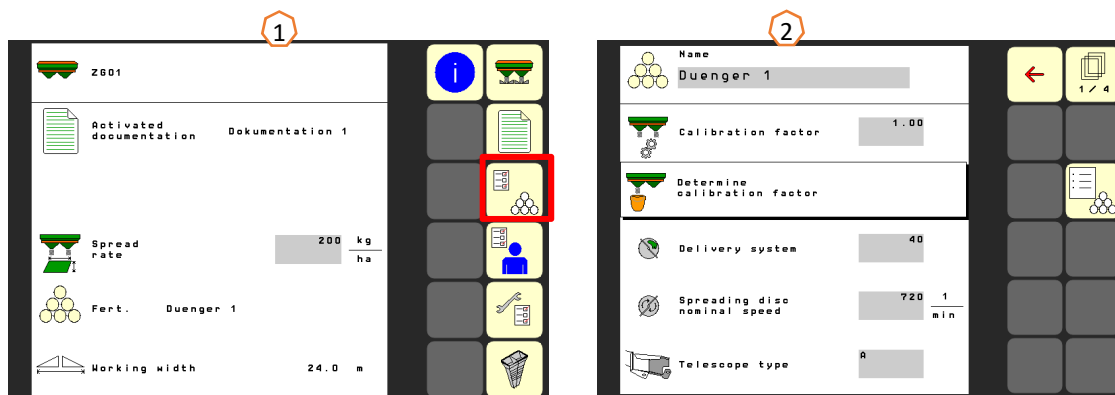
















## 7. Creating a fertiliser

















### Entry of the data from the setting chart in the software

Open the fertiliser database (1) from the Start screen. Then the following data from the setting chart (3) are entered on pages 1 to 4 (2). An "x" (4) means that the TS system is not used for border spreading, and that border spreading is achieved by reducing the speed.

**Note:** always enter all of the values from the table. The throwing direction and throwing distance parameters must also be entered, even if ArgusTwin is not installed.



ZA-TS / ZG-TS															
TS 3	32.0	16	800	C	3	900	3	15	800	3	25	720	34	-2	200
	33.0	16	800	C	3	900	3	14	800	3	24	720	34	-1	200
	36.0	17	900	D	X	720	1	14	800	1	24	720	36	0	200

	Working width [m]
	Setting value of the Delivery system
	Spreading disc speed [rpm]
	Telescopic blade choice
X	without TS system
	1/2 Working width [m]
	Distance to field border [m]
	Side spreading
	Boundary spreading
	Water course spreading
	Telescopic blade setting
	Spread rate reduction when boundary or water course spreading [%]
	Average granule diameter [d50]
	Bulk density [kg/l]
	Switch-on point [m]
	Switch-off point [m]
	Throw-off direction

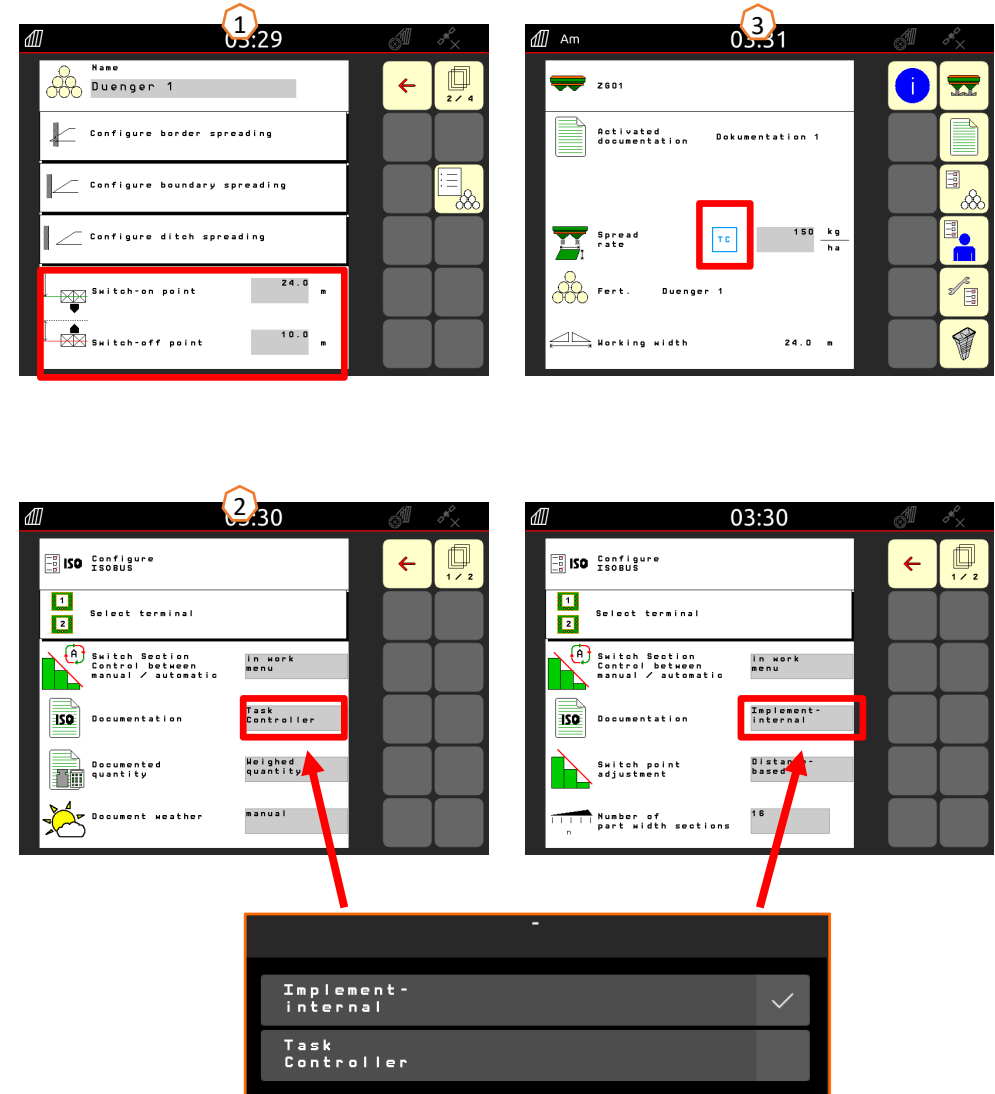
## 8. Preparations on the implement for the Task Controller

**Terminal:** the functions of the Task Controller are controlled via the terminal. The terminal must be prepared accordingly. You can find more information in the operating manual for the respective terminal.

**(1) Switch-on/-off points:** **Fertiliser database >** These times define the delay between the moment when the terminal issues the command to switch the part-width sections on or off and when the implement really executed this command. Incorrect settings can cause overlaps or gaps. These values can be found in the fertiliser table. **Important:** every fertiliser has different flight properties and therefore a different switch-on and -off point. These values must be checked on the field.

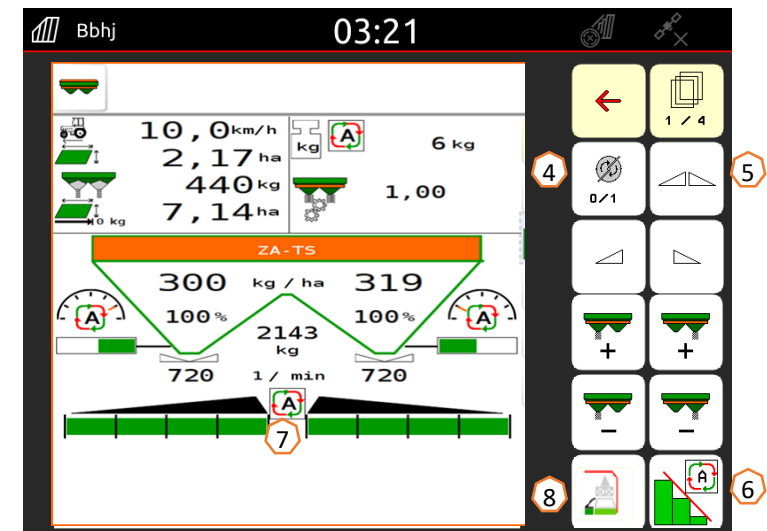
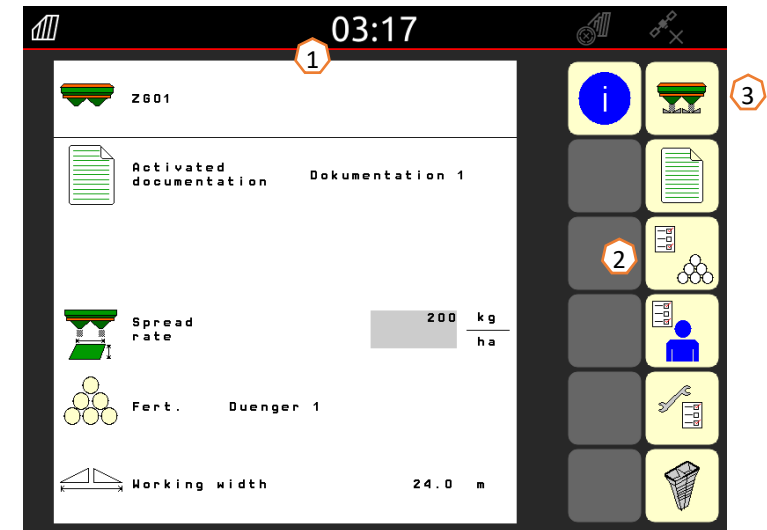
**(2) Task Controller:** **User menu > Configure ISOBUS** Under the Documentation point, there is the choice between "Implement internal" and "Task Controller".

**(3) Application maps / jobs:** the "TC" icon in the Work menu and the Start menu indicates that the implement is receiving the target spread rates from the Task Controller (application map or job) or from an N-sensor.



## 9. Procedure during operation

- From **starting the tractor** to **activated Section Control** (automatic part-width section control).
  - Prerequisite is that the implement is coupled. Details on the icons can be found on pages 4 and 5.
1. Switch on the tractor and terminal.
  2. Change to the Start screen or start from here (1).
  3. Create a fertiliser (2) and enter data from the setting chart. Simply skip this point if the fertiliser already exists, see page 9.
  4. Change to the Work menu (3).
  5. Switch on the spreading discs (4).
  6. Actuate the spreading disc button until the acoustic warning signal is muted.
  7. Open the shutters (5), then the main part-width section switch will be highlighted in black. The shutters are opened at a forward speed of more than 1 km/h.
  8. Activate automatic part-width section control (6). It is possible that prerequisites, such as starting a job, still need to be met in Section Control on the terminal. If the automatic icon flashes yellow (7), Section Control on the terminal is ready. As a result, automatic mode can be started directly from the spreader. The spreader is now prepared.
  9. Boundary spreading can be activated in combination with HeadlandControl (8).
  10. Check the lateral distribution with the mobile test rig or EasyCheck, see page 13.
  11. Switch on boundary, trench or border spreading if necessary, see page 5.
  12. To finish the work, close the shutters and switch off the spreading discs.



## 10. Checking the lateral distribution

The mobile test rig (1) / EasyCheck (2) enable checking of the lateral distribution directly on the field. For a more detailed description, refer to operating manual MG511 Mobile Test Rig or MG6126 EasyCheck. With ArgusTwin, use of the mobile test rig is mandatory!

### Assembly:

The test rig contains 16 test trays including a grid and 2 measuring cups or 16 mats.

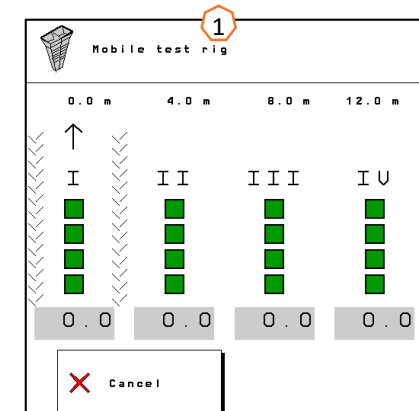
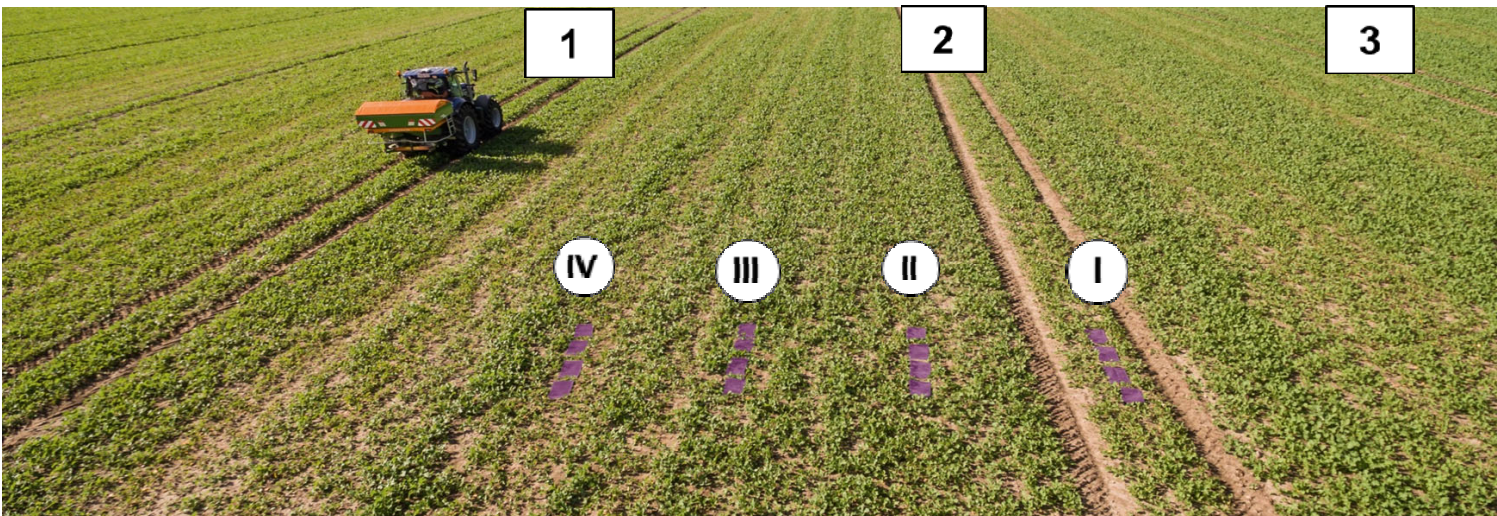
4 trays or mats are set up in line

The 4 rows (I ... IV) cover half of the working width.

The rows are evenly distributed. The terminal or the mySpreader app also provides the spacing of the rows as an aid.

### The test rig must be driven over as follows:

1. Travel tramline 1.
2. Check whether fertiliser has been collected in tray/mat row I:
  - No: travel tramline 2.
  - Yes: travel tramlines 2 and 3.
3. Pour the contents of the tray rows into the measuring funnel and read off the quantity. With EasyCheck, take pictures of the mats.





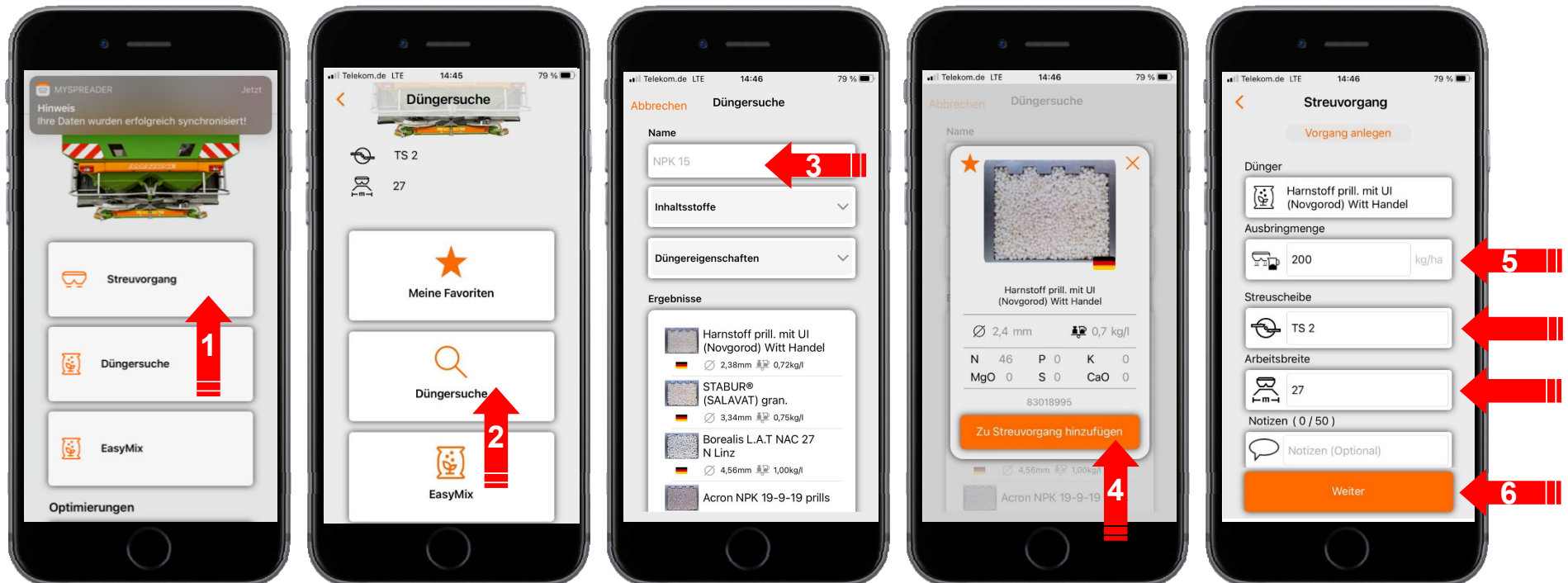
# 11. MySpreader

With the mySpreader app, two well-known apps "EasyCheck" and "FertiliserService" are merged into one app. The app thus combines all measures and data.

It replaces the two apps "EasyCheck" and "FertiliserService".

## Creating a spreading procedure:

1. Select "Spreading procedure"
2. Press "Fertiliser search"
3. Search for the designation
4. Confirm selection
5. Select the spread rate, spreading disc and working width parameters
6. Confirm the selection with "Continue" (see page 15)



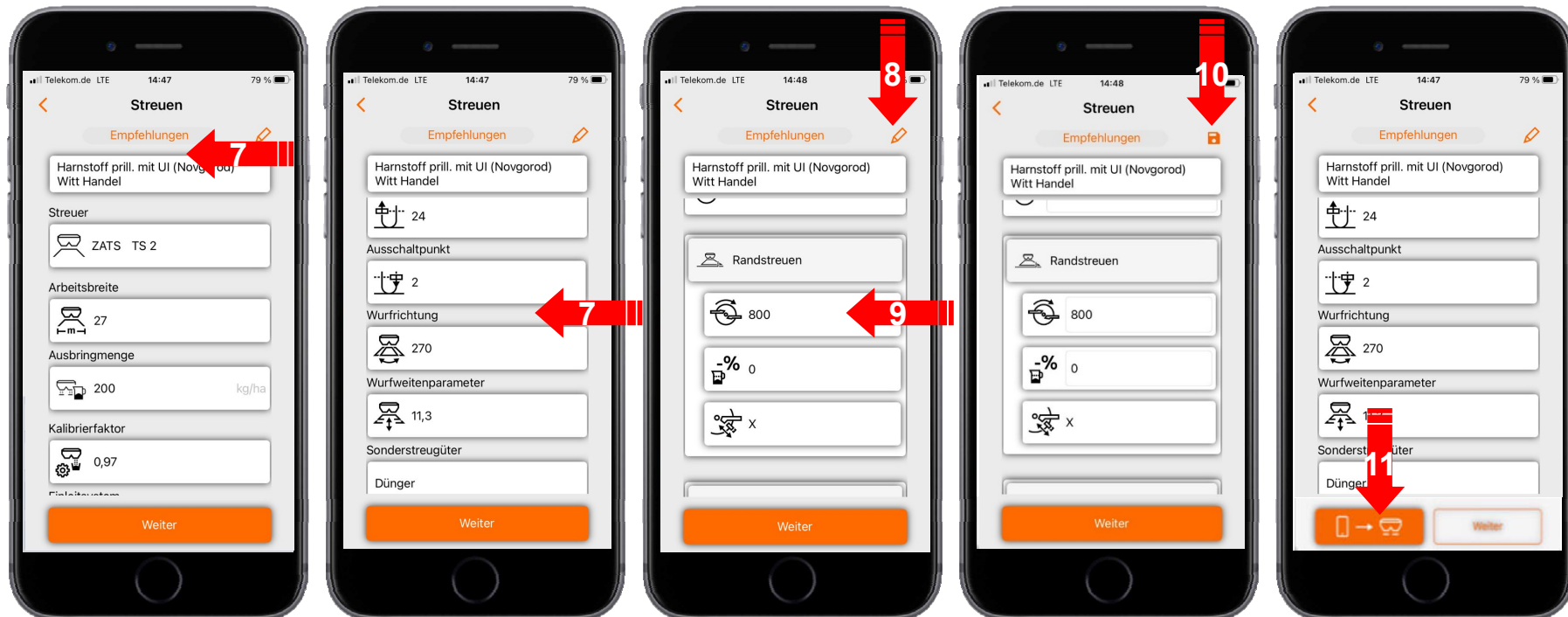


# 11. MySpreader

## Creating a spreading procedure:

7. The setting recommendations can now be verified
8. + 9. + 10. If desired, the suggested values can be changed and overwritten
11. Send the parameters to the implement\* or enter them manually in the implement software

\* If a Bluetooth connection is established (see page 16)



## 12. mySpreader Connect licences

The AgApps expand the scope of functions of AMAZONE implements and terminals.

- Connection via Bluetooth or wireless LAN
- Expanded operation options using apps
- They each consist of:
  - Hardware connection
  - Licence
  - Free app





## SmartLearning app

The AMAZONE SmartLearning app offers video training courses for the operation of Amazone implements. The video training courses can be downloaded onto your smartphone if necessary, and are therefore available offline. Simply select the desired implement for which you want to watch a video training course.



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