Orientation Aid for the Start of the Season

MG7162-EN-GB

Precea – mounted product types

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1. General instructions

- Use of this document requires that the operating manuals for the machine and the software have been read and understood. The corresponding documents are shown on the right side.
- For this reason, it is necessary to refer to the operating manual for additional information. The operating manual must always be available when working with the orientation aid for the start of the season.
- The Orientation Aid for the Start of the Season - **Precea** document serves as a guideline for the user to check the machine for the new season and to put it back into operation. Depending on the equipment, this document refers to software version **NW110-M.015** or **NW356-J.009** and is only valid for these versions.

Designation	Operating manual
Precea ISOBUS software	MG7486
AMASCAN 2 control computer	MG7342
AmaCheck control computer	MG6127
Precea 3000-A/-ACC-AFCC	MG6659
Precea 4500-2/-2CC/-2FCC	MG6149
Precea 3000/4500/6000/-CC/-FCC	MG6660
Precea 6000-2/-2CC/-2FCC	MG6967

2. Preparing the machine

Tractor prerequisites

3000(-CC) (-FCC)	3000-A(-ACC) (-AFCC)	4500(-CC)	4500-2(CC) (FCC)
above 70 HP	above 160 HP	above 90 HP	from 100 HP
6000-2	6000-2CC (-2FCC)	6000-CC	6000
from 150 HP	above 180 HP	above 120 HP	from 130 HP

Tractor pump output

- Machine with mechanical fan drive, at least 20 l/min
- Machine with hydraulic fan drive, at least 50 l/min at 150 bar

Connections

Depending on the machine equipment, the following connections are required:

- Single-acting: track marker (for Precea 6000: double-acting), filling auger, fan drive (pressure line with priority)
- Double-acting: frame ballasting (**2**) (special equipment), telescoping frame
- Pressureless return flow (max. 5 bar): fan drive

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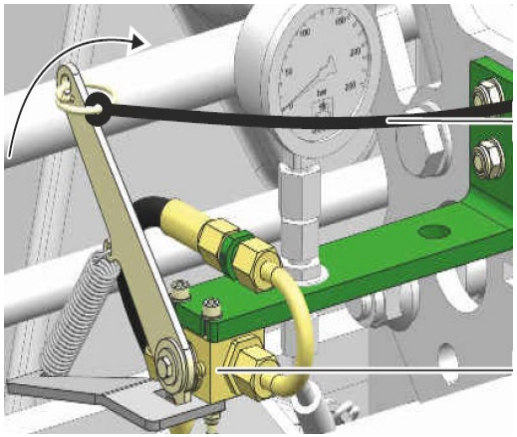

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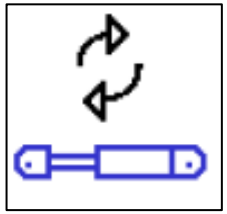

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2. Preparing the machine

Coupling the machine

Connect all connections:

ISOBUS, lighting, hydraulic system, PTO shaft. Take up and secure the machine with the lower links. Raise the jacks.

Telescoping or folding the machine

- Telescoping: release the transport lock (**3**) and telescope the machine out until the machine sections have reached the end position.
- Folding: unfold the machine. This automatically releases the transport lock. After the machine sections have reached the end position, actuate the control unit for another 5 seconds to fill the hydraulic accumulators.

With the Comfort hydraulic system, telescoping or folding the machine via the ISOBUS terminal (**4**) or the ComfortClick (Precea Special) (**5**) must be pre-selected.

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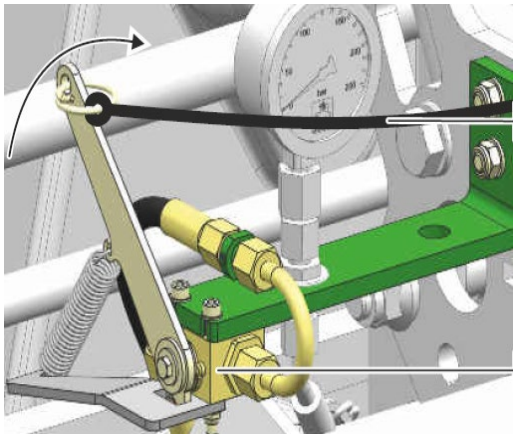

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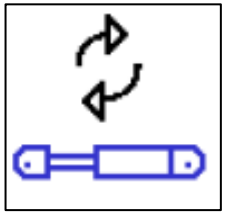

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2. Preparing the machine

Aligning the machine on the field

Align the machine on the field with the top link parallel to the ground. The track marker bracket (**1**) provides guidance.

Top link lengths for mounted machines (2)

Pack top machines on a soil tillage machine are aligned using the top link between the soil tillage machine and the Precea. Here, the stickers on the machines showing the respective top link lengths serve as basic information or basic settings.

Mechanical top link (short) for active soil tillage:

- Length 510 mm +- 20 mm for Precea 3000-A and Precea 3000-AFCC

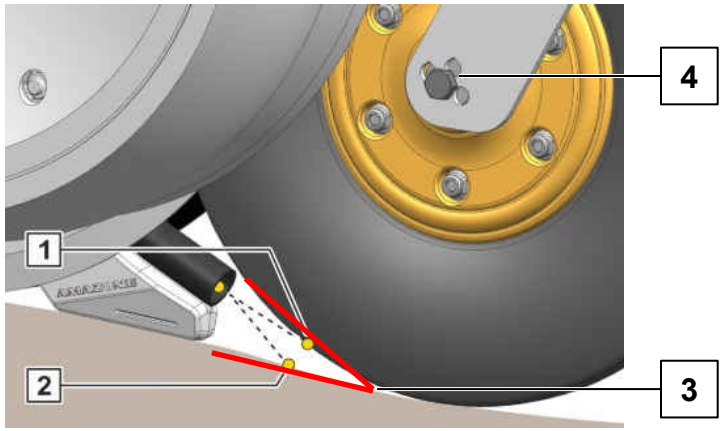
Mechanical top link (long) for passive soil tillage (CombiDisc):

- Length 845 mm +- 20 mm for Precea 3000-ACC and Precea 3000-AFCC

Basic setting = the catch roller should be difficult to turn by hand (depending on the soil), but should not bend or be deformed.

By making adjustments with the top link, the opening angle of the "catch wedge" (**3**) is positively or negatively affected. In addition, the position of the catch roller can also be changed in the hole pattern (**4**) of the catch roller holder.

1



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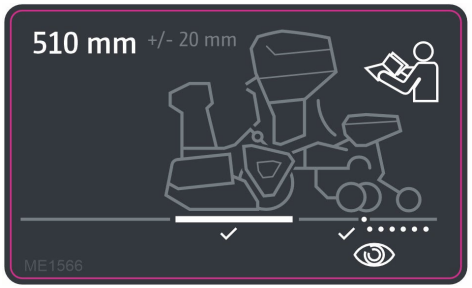


3. Calibration of the fertiliser metering

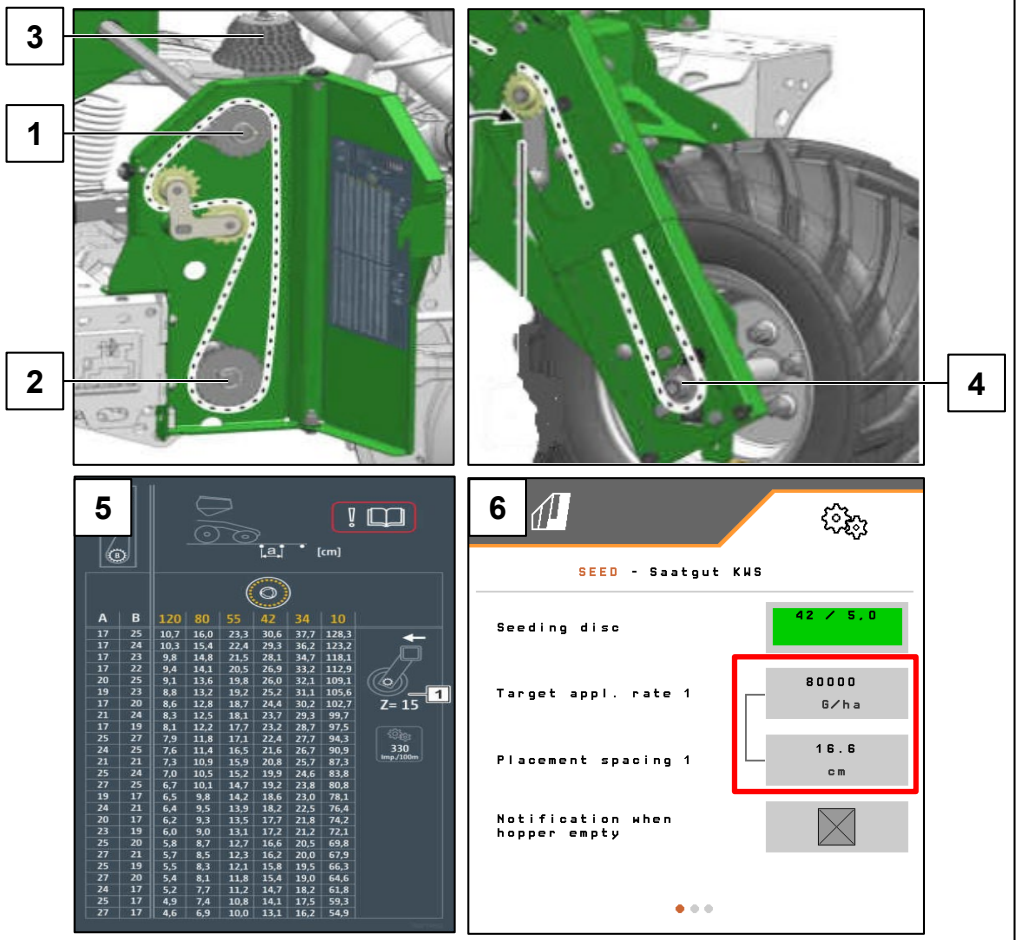
- **General**: turn the calibration trough (**1**). Set the calibration flap lever to the down position (**2**).
- **Precea Super**: prepare for calibration via the software, Field menu/Calibration/Fertiliser (**3**), check the values and change if necessary (**4, 5**), pre-metering (**6**). Calibrate with the calibration button or TwinTerminal (**2**). Weigh the quantity and enter the value on the terminal.
- **Precea Special**: set the gearbox to position 50 (**7**).
  Depending on the working width and the desired calibration area, read the number of crank turns from the table (**8**). Turn the crank, multiply the weighed value by 40 or 100, determine the new gearbox position with the calculator disc (**9**).

NOTE

When adjusting to the new setting, first set the gearbox to position 0 and then to the new desired gearbox position.

4. Adjusting the application rate for seed

- **Precea Special**: to set the placement spacing, two gear wheels (**1**, **2**) are changed. Different gear wheels (**3**) are available for this. If the spread rate cannot be reached, the gear wheel (**4**) can be changed on the leading drive wheel. The table (**5**) shows which gear wheel pair results in which placement spacing. The table varies depending on whether a leading or trailing drive wheel is installed, and is only valid for the specified pulses/100 m.
- **Precea Super**: Settings/Products/Seed menu (**6**). Here, the target application rate 1 and the placement spacing 1 can be set. For the calculation, the corresponding singling disc must be selected. The target application rate 2 and the placement spacing 2 only need to be entered if you want to set different spread rates on different rows, e.g. for seed propagation.
- **From software version NW356-J.009 onwards, an additional singling disc, "Seeding disc 2", can also be selected.**



5. Machine settings

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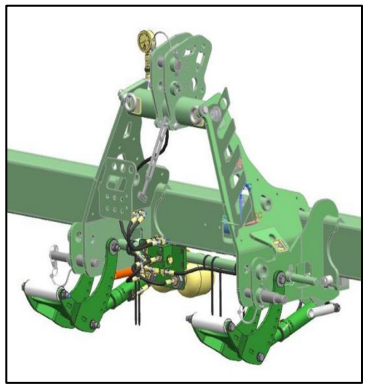

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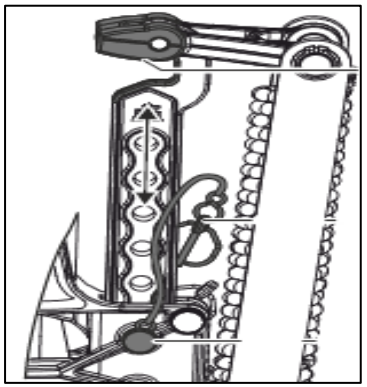

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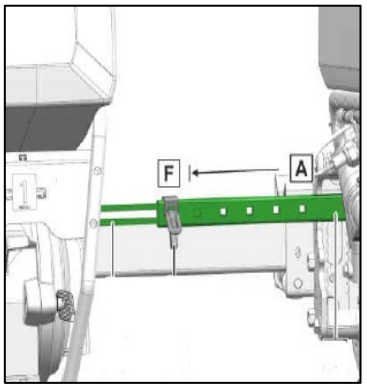
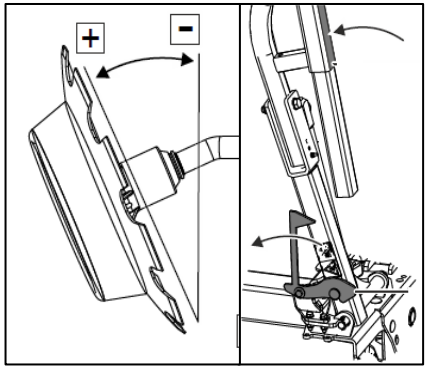


- (**1**) **Frame ballasting (special equipment)**: depending on the frame ballasting version, up to 1000 kg can be transferred from the tractor to the machine. This allows the coulters to run more smoothly and the placement accuracy is improved. The higher the top link is attached to the tractor, the better the pressure transfer. Actuate the tractor control unit and set the desired pressure (between 130 and 160 bar), taking the soil properties into consideration. The pressure is shown on a pressure gauge.
- (**2**) **Tractor wheel mark eradicator (special equipment)**: release the linch pin and adjust the working depth. A wing coulter, narrow coulter or heart-shaped coulter can be used, depending on the area of application.
- **Fan speed:** depending on the equipment, set the oil quantity on the tractor control unit (take account of the hydraulic oil temperature) or the PTO shaft speed (max. fan speed 5000 rpm).
  As a start value for beets, rapeseed or sunflowers: set 35+5 mbar, for maize or soya: set 45+5 mbar when the singling disc is filled and adjust if necessary. The positive pressure is shown on a pressure gauge or on the ISOBUS terminal.
- (**3**) **Row spacing** (only with variable telescopic frame): telescope the frame completely in and briefly telescope it out again (pull on the pull rope), so that the linch pins are without pressure. Insert the linch pin for the desired row spacing. Telescope the frame back out again.

5. Machine settings

- (**1**) **Track marker**: release the transport lock (if equipped) and adjust the track marker depending on the working width. Adjust the pitch of the disc depending on the soil type.
- **Fertiliser placement depth**: the lateral distance from the fertiliser coulter to the seeding coulter is 60 mm and cannot be adjusted. Depending on the equipment version, enter the setting for the placement depth as follows:
  - (**2**) **With leaf spring overload safety**: the depth can be adjusted from 3-12 cm. Loosen the locking bolts and adjust the placement depth.
  - (**3**) **Coupled fertiliser coulter**: the depth of the fertiliser coulter is coupled with the depth of the seeding coulter. When the depth of the seeding coulter is adjusted, the depth of the fertiliser coulter is also automatically adjusted. The depth can be adjusted at 5 levels. Insert the pin in the desired position.

1



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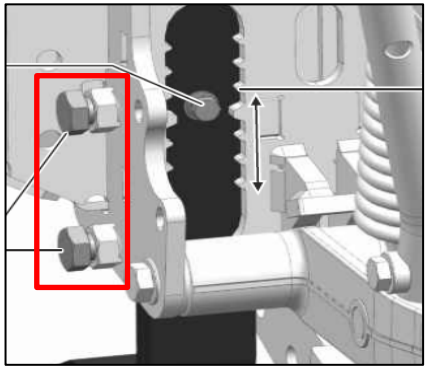

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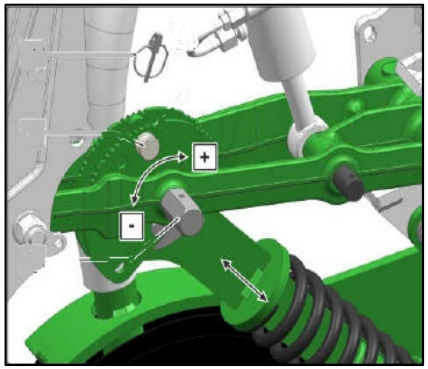
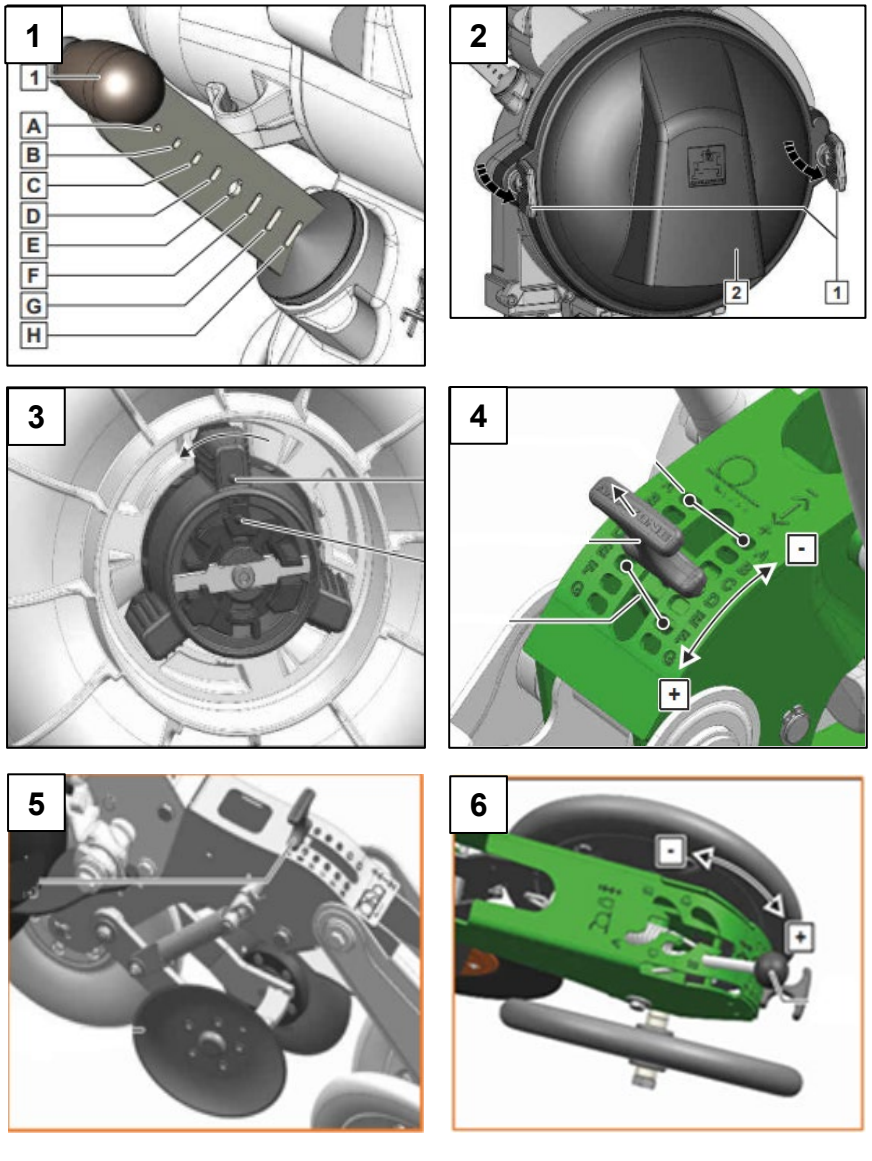


5. Machine settings

- (**1**) **Sliding shutter**: set according to the seed type, see table on page 13. Only open far enough so that there is enough seed in front of the singling disc but the seed chamber is not overfilled.
- (**2**) **Singling disc**: for the different seed types, there are suitable singling discs with the corresponding number of holes and hole diameters, see "Installing the singling disc" in the operating manual. To replace the disc, remove the cover (**2**) and release the lock (**3**). For every disc, there is a suitable ejector wheel that also needs to be changed.
- (**4**) **Seed placement depth**: adjust using the setting lever. Half-steps are possible by setting the lever at an incline. The seed placement depth depends on the soil type, coulter pressure and working speed, amongst other things, and can only be determined during field operation.
- (**5**) **Disc closer (optional)**: adjust the disc closers using the setting lever. In Position A, the disc closer is deactivated.
- (**6**) **V press rollers**: the roller closes the seed furrow. The pitch, spacing and pressure can be adjusted. In addition, the rollers can be arranged offset to one another.



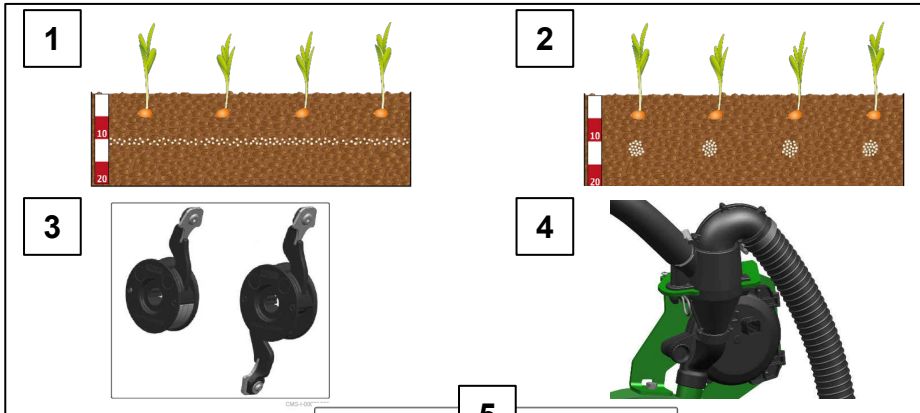
5. Machine settings

- Depending on the mode of operation, it is possible to switch between band placement (**1**) and FertiSpot (**2**) portioning.

NOTE

When switching from the rotor unit to band placement or back again, the machine must be restarted.

- **(3) Rotor unit:** depending on the desired forward speed and spread rate, as well as the seed rate / seed type, either the single rotor or the double rotor is required.
- **(4) Band placement unit:** if necessary, you can switch from the rotor unit to the band placement unit. Observe the instructions in the operator manual for this.
- **(5) Software:** FertiSpot is activated or deactivated in the machine software in the Fertiliser menu. In the Work menu, the FertiSpot status can optionally be displayed in the multi-function display.
- **(6) Performance specifications:** for full use of FertiSpot, the performance specifications must be observed. This ensures a smooth mode of operation.



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Single rotor						
Application rate	Row width					
	45 cm	50 cm	60 cm	70 cm	75 cm	80 cm
60,000 Körner/ha to 100,000 Körner/ha	to 15 km/h	to 15 km/h	to 15 km/h	to 15 km/h	to 15 km/h	to 14 km/h
> 100,000 Körner/ha to 120,000 Körner/ha	to 15 km/h	to 15 km/h	to 15 km/h	to 13 km/h	to 13 km/h	to 11 km/h
> 120,000 Körner/ha to 150,000 Körner/ha	to 15 km/h	to 15 km/h	to 12 km/h	to 12 km/h	to 10 km/h	to 9 km/h
> 150,000 Körner/ha	Conversion to double rotor is necessary					

Double rotor						
Application rate	Row width					
	45 cm	50 cm	60 cm	70 cm	75 cm	80 cm
60,000 Körner/ha to 100,000 Körner/ha	10 km/h to 15 km/h	9 km/h to 15 km/h	8 km/h to 15 km/h	7 km/h to 15 km/h	7 km/h to 15 km/h	6 km/h to 15 km/h
> 100,000 Körner/ha to 120,000 Körner/ha	7 km/h to 15 km/h	6 km/h to 15 km/h	5 km/h to 15 km/h	5 km/h to 15 km/h	to 15 km/h	to 15 km/h
> 120,000 Körner/ha to 150,000 Körner/ha	to 15 km/h	to 15 km/h	to 15 km/h	to 15 km/h	to 15 km/h	to 15 km/h
> 150,000 Körner/ha to 300,000 Körner/ha	to 15 km/h	to 15 km/h	to 12 km/h	to 10 km/h	to 10 km/h	to 9 km/h
> 300,000 Körner/ha to 380,000 Körner/ha	to 13 km/h	to 12 km/h	to 10 km/h	to 8 km/h	to 8 km/h	to 7 km/h
> 380,000 Körner/ha to 500,000 Körner/ha	to 10 km/h	to 9 km/h	to 7 km/h	to 6 km/h	Conversion to strip placement is necessary	

5. Machine settings

- The actual possible forward speed and the resulting area efficiency depend on various influencing factors. These include, among other things, the technical settings of the machine and the respective agricultural and external operating conditions. Accordingly, the mode of operation must be adapted to the existing conditions.
- The following tables are used to set the grain singling according to the seed. The sliding shutter positions and fan pressures are reference values. Check the grain placement after driving a short distance.
- In addition, the tables in the operating manual provide an overview of the possible forward speeds, depending on the crops and seed rate. These form the basis for successful use of the machine.
- For further information on converting the machines when changing crops, please refer to the current operating manual.

Singling disc with 42 holes					
Spread rate	Row width				
	0.45 m	0.5 m	0.6 m	0.75 m	0.8 m
≤10 Körner/m²	15 km/h	15 km/h	15 km/h	15 km/h	15 km/h
11 Körner/m²	15 km/h	15 km/h	15 km/h	15 km/h	14.2 km/h
12 Körner/m²	15 km/h	15 km/h	15 km/h	13.9 km/h	13 km/h
13 Körner/m²	15 km/h	15 km/h	15 km/h	12.8 km/h	12 km/h
14 Körner/m²	15 km/h	15 km/h	14.9 km/h	11.9 km/h	11.1 km/h
15 Körner/m²	15 km/h	15 km/h	13.9 km/h	11.1 km/h	10.4 km/h
16 Körner/m²	15 km/h	15 km/h	13 km/h	10.4 km/h	9.7 km/h
17 Körner/m²	15 km/h	14.7 km/h	12.2 km/h	9.8 km/h	9.2 km/h
18 Körner/m²	15 km/h	13.9 km/h	11.6 km/h	9.2 km/h	8.7 km/h

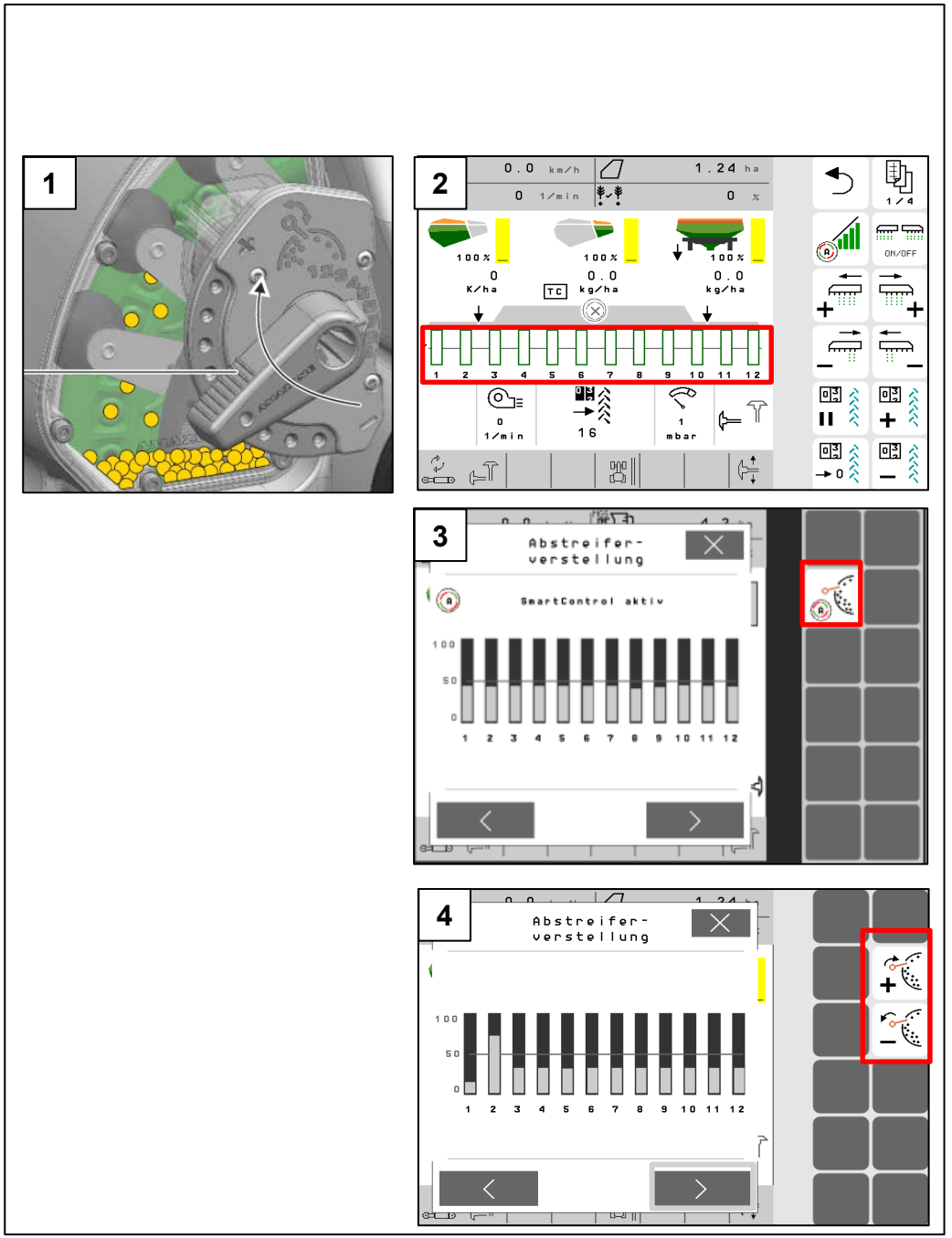
Field bean	Soybean		Sorghum	Rapeseed			Variety	Seed
	120 g to 265 g	120 g to 265 g	25 g to 45 g	> 7 g	4.5 g to 7 g	< 4.5 g	Thousand grain weight	
55	120	80	80	120	120	120	Holes	Seed singling unit
6 mm	4 mm	4 mm	2.5 mm	1.6 mm	1.3 mm	1 mm	Hole Ø	
Red	Purple	Silver grey	Bordeaux red	Black	Anthracite grey	Light grey	Colour	
G/H	D/E	D/E	B/C	B/C	B/C	B/C	Sliding shutter	
45 mbar ± 5 mbar	45 mbar ± 5 mbar		35 mbar ± 5 mbar	35 mbar ± 5 mbar			Air pressure	
Green	Green		Orange	Orange			Filling block	
20 mm	20 mm	16 mm	16 mm	16 mm	16 mm	16 mm	Opto-sensor Ø	
20 mm	20 mm to 16 mm	16 mm	16 mm	16 mm	16 mm	16 mm	Feed channel Ø	PreTeC mulch seeding coulter
16 mm	16 mm	16 mm	16 mm	12 mm	12 mm	12 mm	Diameter of the furrow former	
16 mm	16 mm	16 mm	16 mm	20 mm	20 mm	20 mm	Seed press roller	

- Depending on the seed, the actual spread rate can deviate strongly from the target rate.
- 45 cm or 50 cm row width with max. 50 Körner/m².
- Violet singling disc: maximum working speed 12 km/h. Deviations can occur in the distribution along the row.
- Silver-grey singling disc: maximum working speed 8 km/h.

Maximum working speed 10 km/h.

6. Adjusting the scraper

- **Precea Special**: if there are gaps, reduce the value. Increase the value if there are doubles (**1**).
- **Precea Super**:
  - **Automatic scraper** (SmartControl): this function is activated by default and automatically controls the scrapers depending on whether the opto-sensors report gaps or doubles. To deactivate SmartControl, click on the bar graph for the singling accuracy (**2**) and then on the button (**3**).
  - **Adjusting the scraper manually**: to adjust the scraper manually, the SmartControl function must be deactivated. Click on the bar graph for the singling accuracy (**2**). Use the "plus and minus" buttons to adjust all of the scrapers together (**4**). If you scroll further in the display, each scraper can be adjusted individually.

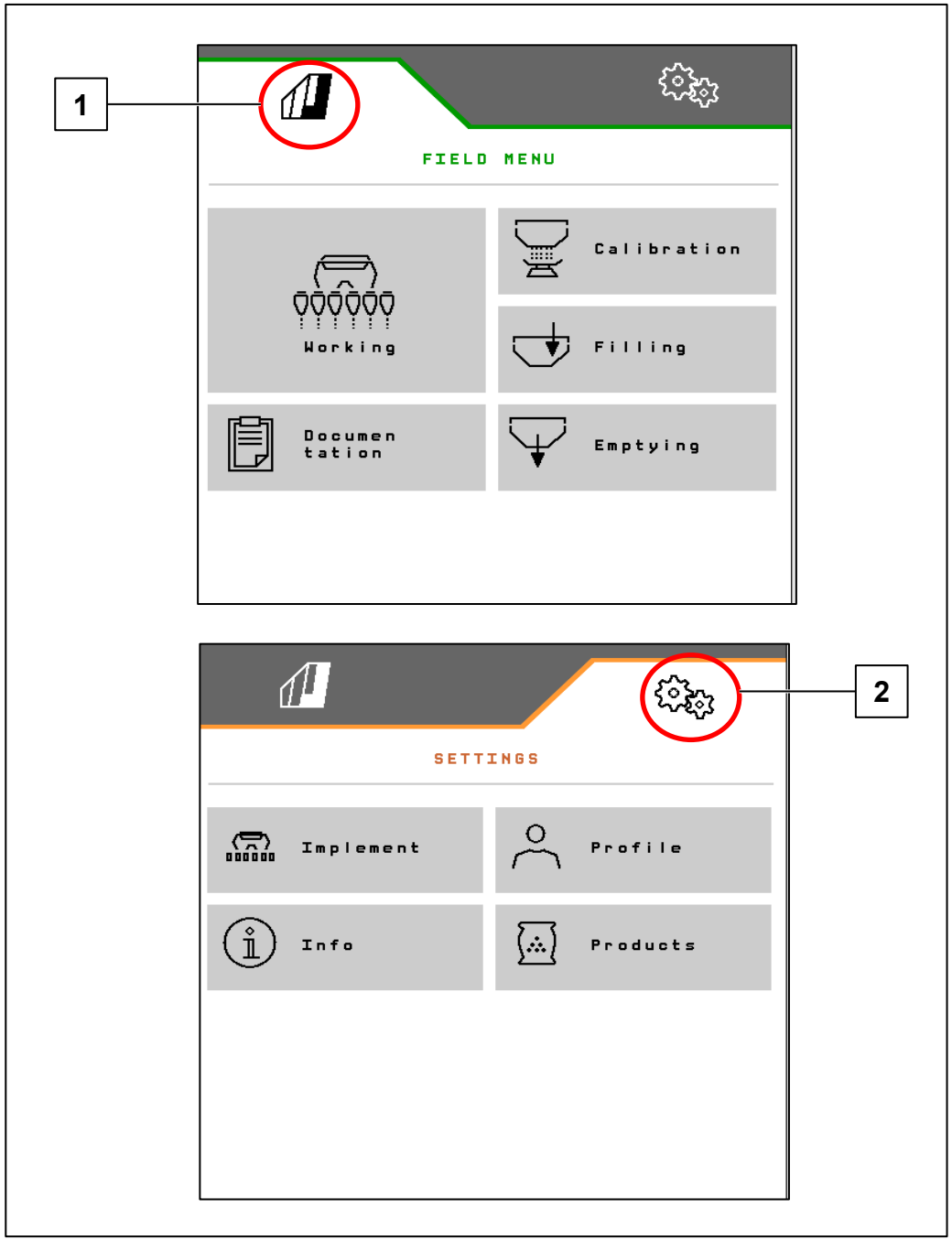


IMPORTANT

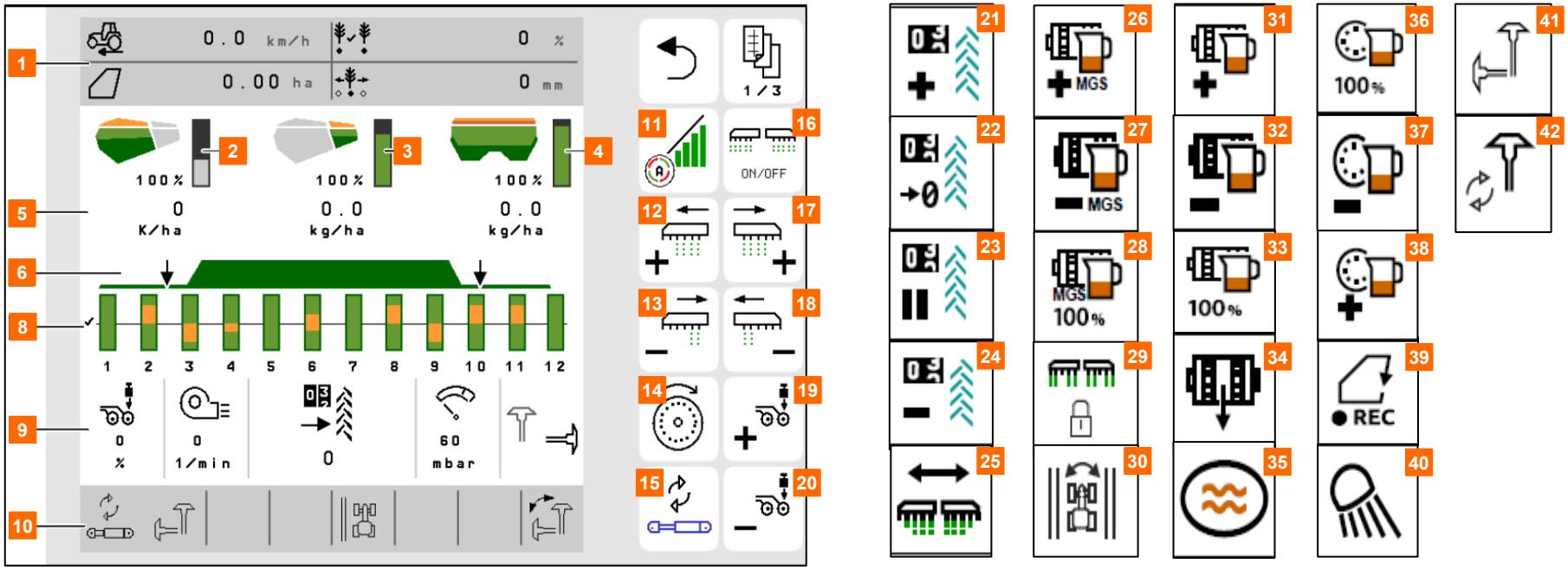
- To ensure that SmartControl functions properly, the opto-sensors should be cleaned regularly! This ensures that optimal operation of the system.

7. Homepage of the machine software (ISOBUS)

- The machine software is divided into the Field menu (**1**) and the Setting menu (**2**).
- By clicking one of the buttons circled in red in the image, you can switch between the menus.
- From the Field menu, you can switch to the submenus Work, Calibration, Documentation, Filling, and Emptying.
- From the Setting menu, you can switch to the submenus machine, Profile, Products, and Info.



8. Work menu of the machine software (ISOBUS)



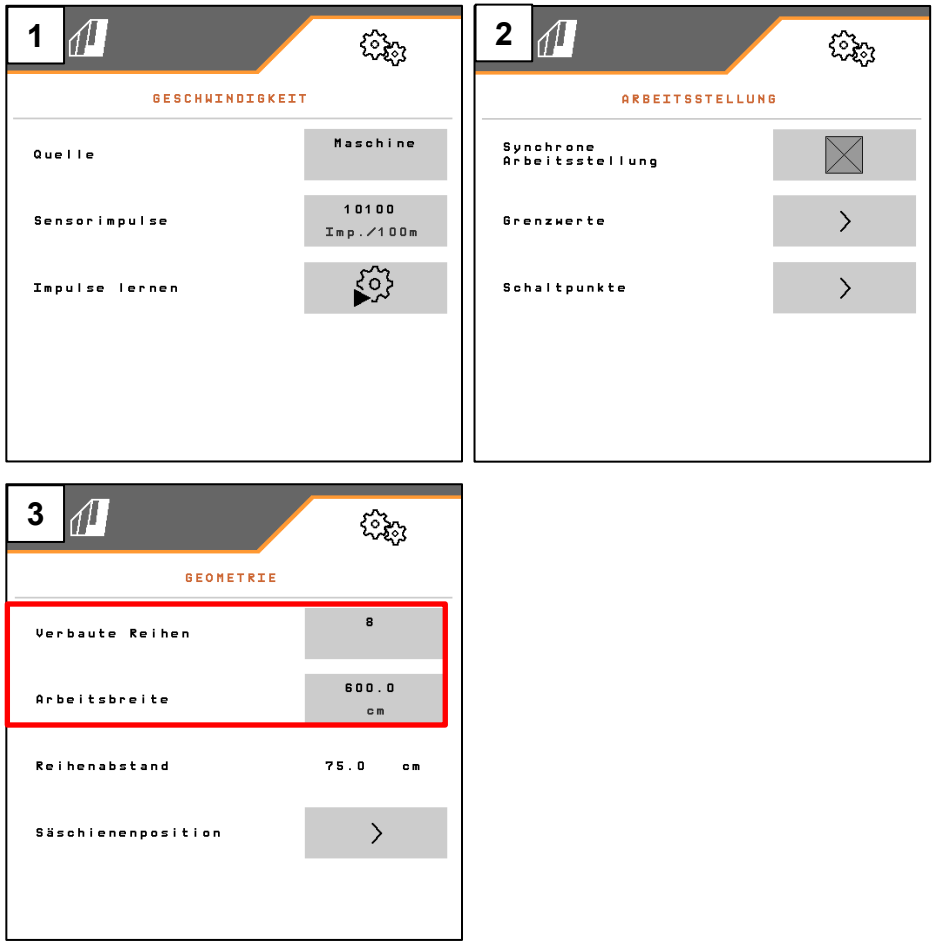
(1) Multi-function display (freely configurable)
(2) Seed fill level indicator
(3) Micro-granules fill level indicator
(4) Fertiliser fill level indicator
(5) Application rates
(6) Status of the working position and Section Control
(8) Bar graphs for the seeding coulters
(9) Machine data
(10) Status bar
(11) Section Control on/off
(12) Switch on part-width section to the left
(13) Switch off part-width sections to the right
(14) Fill the singling disc
(15) Change pre-selected hydraulic function
(16) Switch all part-width sections and the metering unit on and off
(17) Switch on part-width sections to the right
(18) Switch off part-width sections to the left
(19) Increase the coulter pressure
(20) Reduce the coulter pressure
(21) Advance the tramline counter by 1
(22) Set the tramline counter to zero
(23) Pause and start the tramline counter
(24) Reduce the tramline counter by 1
(25) Switch on all part-width sections
(26) Increase micro-granules application rate
(27) Reduce micro-granules application rate
(28) Set micro-granules application rate to setpoint
(29) Block rows
(30) Switch over field edge for tramline calculation
(31) Increase fertiliser application rate
(32) Reduce fertiliser application rate
(33) Set fertiliser application rate to setpoint
(34) Pre-meter fertiliser
(35) Water hole
(36) Set seed application rate to setpoint
(37) Reduce seed application rate
(38) Increase seed application rate
(39) Start GPS recording
(40) Switch work lights on and off
(41) Pre-select left/right track marker
(42) Change track marker function

NOTE

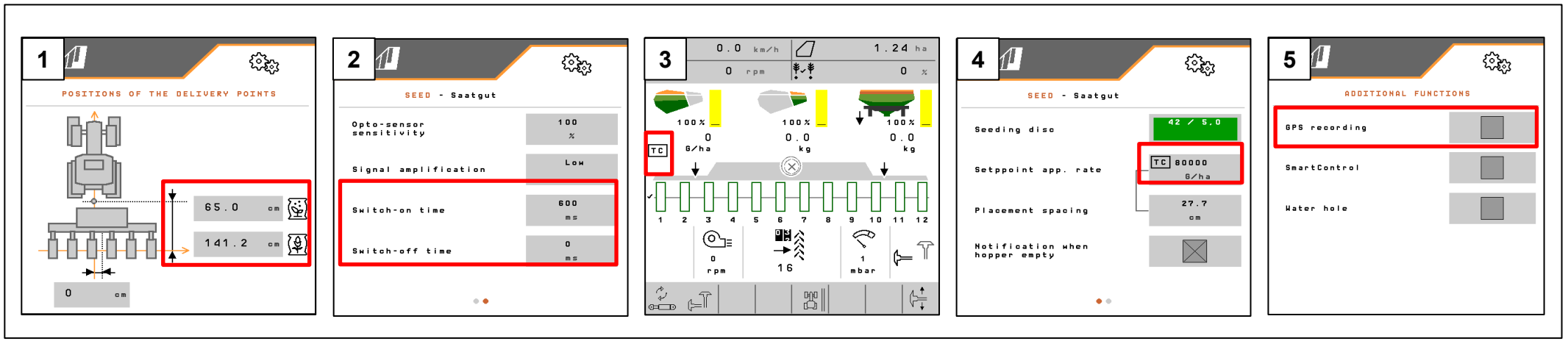
Use the free button assignment in the profile to move the button to the desired position.

9. Software: Settings menu (ISOBUS)

- (1) **Speed signal source / teach-in pulses per 100 m**: Settings/Machine/Speed/Teach-in pulses/Source menu. Here, the source for the speed signal can be selected and the pulses per 100 m can be calibrated. With an electrical drive, the number of pulses is approx. 10000.
- (2) **Source / teach-in working position**: Settings/Machine/Working position/Teach-in switch points menu. Here, the source for the "working position" signal can be selected and the switch points for "metering on" / "metering off" can be taught-in. The limit value must be taught in before teaching in the switch points.
- (3) **Number of rows on the terminal**: Settings/Machine/Geometry menu. Here, check and enter the actual number of rows and the working width to calculate the worked area and grain spacing.



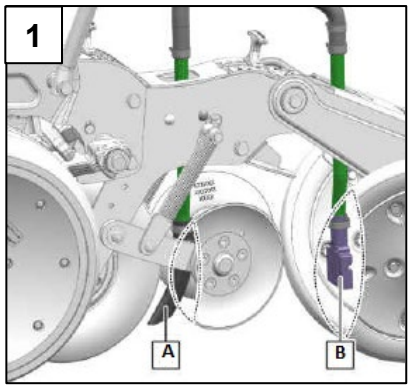
10. Preparation for the Task Controller in the machine software (ISOBUS)

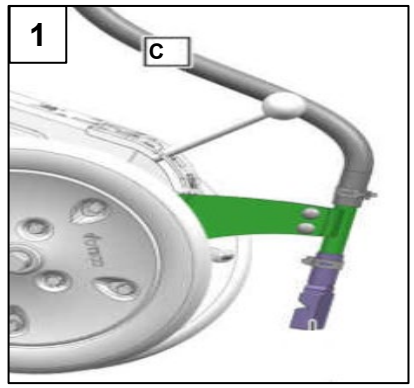


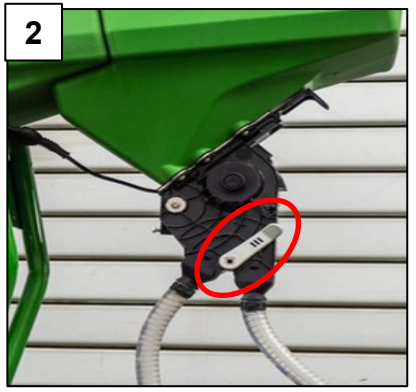
- **Terminal**: the functions of the Task Controller are controlled through the terminal. The terminal must be prepared accordingly. You can find more information in the operating manual for the respective terminal.
- (**1**) **Geometry**: Setting/Machine/Geometry menu: here, the machine geometry can be checked and adjusted.
  The machine logs onto the Task Controller with this geometry. If MultiBoom is activated in the machine software, the machine distinguishes between the placement points for fertiliser and for seed.
- (**2**) **Switch-on and -off time**: Settings/Products/Seed/Fertiliser menu: the switch-on and -off time defines the delay between the command from the terminal to switch the part-width sections on or off until the seed/fertiliser actually reaches the coulter. Incorrect settings can cause overlaps or gaps.
- (**3, 4**) **Application maps / jobs**: the "TC" icon in the Work menu and Product menu indicates that the machine is receiving the target spread rates from the Task Controller and is therefore receiving an application map or job.
- (**5**) **GPS recording**: Setting/Machine/Additional functions menu: with the GPS recording, spreading can be simulated for the connected control terminal without actually spreading seed. The control terminal marks the driven area as the worked area. The worked area can be used to create a field boundary.

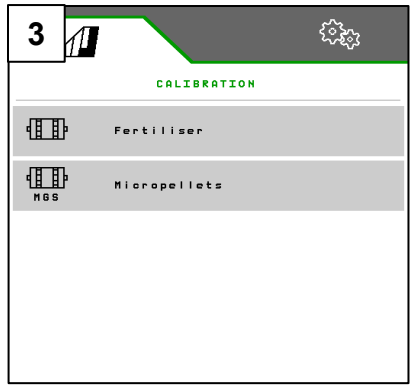
11. Micro-granular spreader (optional)

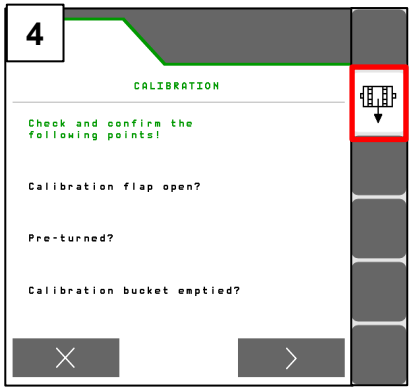
- (**1**) **Application points**: the fertiliser can be delivered in the seed furrow (**A**), in the closing seed furrow (**B**) or on the seed furrow (**C**). The switchover flap is adjusted with a lever (**2**).
- (**3**) **Micro-granule calibration**: Field/Calibration/ Micro-granules menu: check the values and adjust if necessary, pre-meter (**4**). Use the calibration button to calibrate on the first row. Weigh the quantity. Enter the value on the terminal.
- (**5**) **Change the metering wheels**: close the sliding shutter, so that the fastener is released. Use the unlocking tool to open the metering housing. Turn the metering motor counter clockwise and pull it out. Change the metering roller. Reassemble in the reverse sequence.

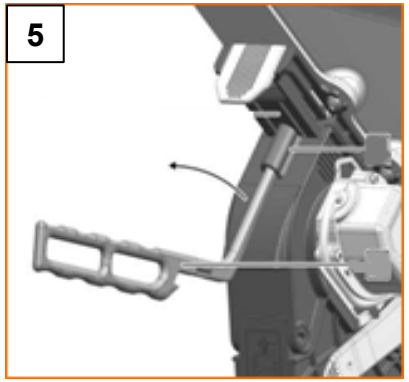












12. Technical information on fertiliser metering

Fertiliser metering unit / micro-granule metering unit

The maximum application rate depends on the spreading material and the equipment. Here, the spreading options are differentiated according to machine types and equipment:

- Rear fertiliser hopper
- FTender
- F-TP
- Micro-granules

On machines with electric metering drives, the application rate can be adjusted via the forward speed. The maximum application rate is based on a forward speed of 15 km/h, depending on the machine type.

Application	Application point	Maximum spread rate
Under-root fertilising	Fertiliser coulter	50 kg/ha to 250 kg/ha
		Precea 6000-2CC with 9 rows and FertiSpot: 50 kg/ha to 220 kg/ha
	Seed belt	50 kg/ha to 75 kg/ha
Micro-fertiliser	Seed belt	35 kg/ha

Metering wheel	Colour	Applications	Application rate
Metering wheel 3 cm³	Grey	Slug pellets	2 kg/ha to 10 kg/ha
Metering wheel 4 cm³	Orange	Insecticide	5 kg/ha to 20 kg/ha
Metering wheel 8.3 cm³	Grey	Pelleted active substances > 3 mm	5 kg/ha to 20 kg/ha
Metering wheel 12 cm³	Green	Micro-fertiliser	10 kg/ha to 35 kg/ha

NOTE

With AMAZONE's practical metering roller configurator, you can easily find the right metering wheels for your seed drill. The configurator not only shows you the correct size of the metering cores, but also gives a recommendation for the forward speed.

SmartLearning app

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

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