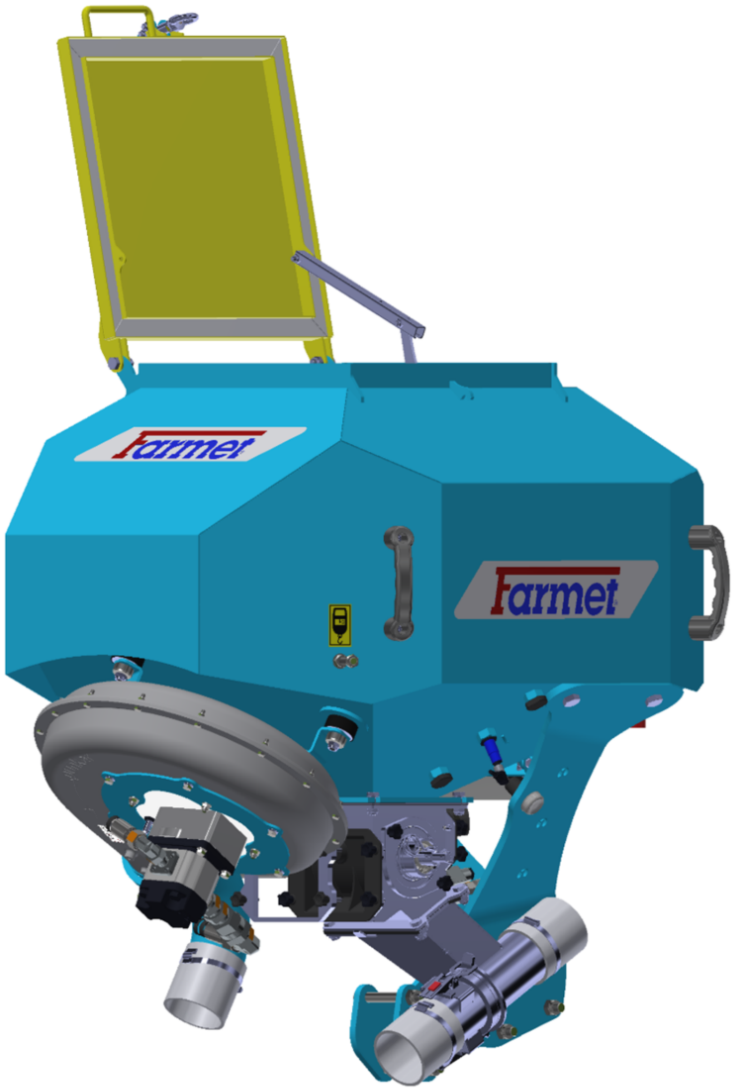
# OPERATING MANUAL

# MICRODRILL PRO

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on 01.03.2025, changes reserved

# PREFACE

Thank you for purchasing a Farmet machine. Thank you also for your trust, which is inspiring and binding for us.

Farmet a.s. is a dynamically developing Czech company engaged in the development, production, sale and service of agricultural machinery for tillage, fertilizer application and sowing, as well as technologies for the processing of oilseeds, vegetable oils and feed production.

The Farmet brand is focused on products of high quality and high utility value with use in productive agricultural and processing operations. Farmet is a partner of modern agriculture and food industry in many markets around the world.

Our own products and technologies are created in close cooperation between Farmet specialists and end customers, research institutions and universities, which is why our products often have unique technical solutions according to the requirements of agricultural practice.

Significant investments in development and modern production operations are a guarantee of further development in the field of quality and new productive production technologies. Our goal is to further increase the added value of products and strengthen their competitiveness in all markets, increase user comfort, occupational safety and environmental protection.

Ing. Karel Žďárský
CEO and Chairman of the Board of Directors

# AGRICULTURAL MACHINES









# OIL & FEED TECH






# IMPORTANT

# READ CAREFULLY BEFORE USE

# KEEP FOR FUTURE REFERENCE

# Contents

# 1 MACHINE CONFIGURATION

| | |
|---|---|
| Serial number of the machine | |
| VIN | |
| Machine code | |
| Additional equipment | |
| HW ECU | |
| SW ECU | |

# 2 TECHNICAL PARAMETERS

| Parameters | MD 300 PRO | MD 500 PRO | MD 800 PRO |
|---|---|---|---|
| Width (mm) | 805 | | 905 |
| Height (mm) | 1 100 | 1 250 | |
| Length (mm) | 950 | 1 200 | 1 600 |
| Hopper capacity without fertilization (l) | 300 | 500 | |
| Filling hole size (mm) | 440 x 440 | | |
| Working speed (km/h) | 10 - 20 | | |
| Number of hydraulic circuits / pressure (bar) **** | 1 / 200 | | |
| Type of quick couplings | ISO 12,5 | | |
| Oil flow for machine control (l/min) | 30 - 40 | | |
| Electrical system requirement | 12 V DC / 40 A | | |
| Weight of machine (kg) ** | | | |

* The actual tensile force can change significantly. Depending on the selected machine variant, depth of cultivation, soil conditions, slope of the land, wear of working bodies sand their adjustment
** The weight of the machine varies depending on the equipment
*** Alternative hydraulic brake/ operating pressure 130±5 bar.
**** According to the equipment of the machine

# 3 GENERAL INSTRUCTION FOR USE

1. The machine is manufactured in accordance with the latest state of technology and approved safety regulations. Even that, there is a risk of injury to the user or third parties or damage to the machine or other property damage.

2. Use the machine only in harmless condition, in accordance with its intended use, with knowledge, with knowledge of possible dangers and in compliance with the safety instructions in these operating instructions.The manufacturer is not responsible for damage caused by using the machine in violation of the machine's limit parameters and the instructions for using the machine. The risk is born by user.

Immediately remove defects, that can negatively effect safety risk!

WARNING – This warning sign must be in the immediate danger of a dangerous situation, ending with serious injury or death.

ATTENTION – This warning sign alerts you to a situation that could result in minor or minor injury. It also alerts you to dangerous actions associated with activities that could damage the machine.

NOTICE– This warning sign indicates a technical recommendation.

RECOMMENDATION

PRESS

3. The machine may be operated by a person authorized by the operator under the following conditions:

- Must have a valid driving license of the relevant category
- They must be demonstrably acquainted with the safety regulations for working with the machine
- He must be familiar with the machine instructions and the machine operator.
- They must know the meaning of the safety signs placed on the machine. Respecting them is important for safe and reliable operation of the machine.

4. Maintenance and service repairs on the machine may only be performed by a person:

- Authorized by the operator.
- Demonstrably aguainted with the safety regulations for working with the machine.
- When repairing a machine attached to tractor has to have the right category of driver license.

5. The operator of the machine must be sure of other persons safety when working with the machine or transporting the machine.

6. When transporting the machine or working on the field the machine operator have to control the machine from inside the cabin.

7. The machine operator can only enter the machine structure only at standstill position and when the machine is blocked from movement for the following reasons:

- Adjustments of working parts of the machine,

- Repair and maintenance of the machine,
- Unlock or secure the axle ball valves,
- Securing the axle ball valves before lowering the side frames,
- Adjustment working parts of the machine after folding side frames.

8. When climbing on the machine don't step on tires of the pneumatic roller or other spinning parts. They can spin and you can fall and have serious injuries.

9. However, the changes are, or adjustments on the machine can be done only with written agreement of the manufacturer. The manufacturer is not responsible for any damage resulting from non-compliance with this instruction. The machine must be maintained with the prescribed accessories, equipment and facilities, including safety markings. All warning and safety signs must be legible at all times and in place. In case of damage or loss the marks must be immediately renewed.

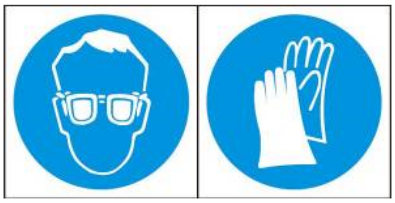
10.When working with machine the operator must have the Manual of using with requirements of safety work available.

11. The operator cannot using the alcohol when working with machine, or pills, or narcotics and hallucinating substances, which they increased lower attention and coordinated abilities. If the operator must consume a pills prescribed by a doctor or consuming free pills for sale must be informed by a doctor that in these circumstances is capable to work responsibly and safely operate the machine.

## 3.1 Safety tools

**For operation and maintenance:**

- Tight-fitting clothes.
- Safety gloves and safety glasses for dust protection and sharp parts of the machine.



# 4 COMMISSIONING

- Before taking over the machine, test and check, whether damage occurred during transport and whether all parts contained in the bill of delivery were supplied.

- Before commissioning the machine, carefully read this operating manual. Before the first use of the machine, familiarise yourselves with its controls and overall function.
- During work with the machine, observe not only the instructions of this operating manual but also generally valid regulations of work safety, health protection, fire and transport safety, and environmental protection.
- The operator must check the machine before every use (commissioning) from the standpoint of completeness, work safety, work hygiene, fire safety, transport safety, and environmental protection. A machine showing signs of damage must not be commissioned.
- Aggregation of the machine with the tractor is to be performed on a flat and hardened surface.
- When working on slopes, observe the lowest allowable slope grade of the set **TRACTOR - MACHINE.**
- Before starting the tractor motor, check whether no person or animal is in the working space of the set and push the warning sound signal.
- The operator is responsible for the safety and all damage caused by the operation of the tractor and the connected machine.
- The operator is obliged to adhere to the technical and safety regulations of the machine determined by the producer when working.
- The operator is obliged to retract the working bodies of the machine from the ground when turning at the headland.
- The operator is obliged to lower the machine to the ground and secure the set against movement before leaving the tractor cabin.

# 5 MACHINE HANDLING WITH TRANSPORT EQUIPMENT

1. Lifting equipment and binding instruments using for manipulation with the machine must have its own load capacity minimum equal with weight of the machine being handled.
2. Attachment of the machine for manipulation may only be carried out in places designed for this purpose and marked with self-adhesive labels showing the „chain“.
3. After attachment (suspension) in places designated for this purpose, it is forbidden to move in the area of possible reach of the manipulated machine.

# 6 MACHINE TRANSPORT ON ROADS

- Microdrill PRO is an additional equipment of the machine. Therefore, it cannot be separately aggregated to the tractor. Regulations for operation on public roads (decrees, acts) apply according to the machine to which Microdrill PRO is mounted.
- If the additional assembly is carried out outside Farmet company, the assembly company is responsible for damage caused by the release of the machine incorrectly or insufficiently attached to the transport vehicle..

- It is strictly forbidden to transport people or cargo on the machine or to attach other machine, trailer or attachments to the machine.

# 7 WORK SAFETY LABELS

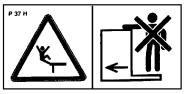
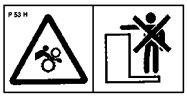
Safety warning labels are used to protect operator.

In general:

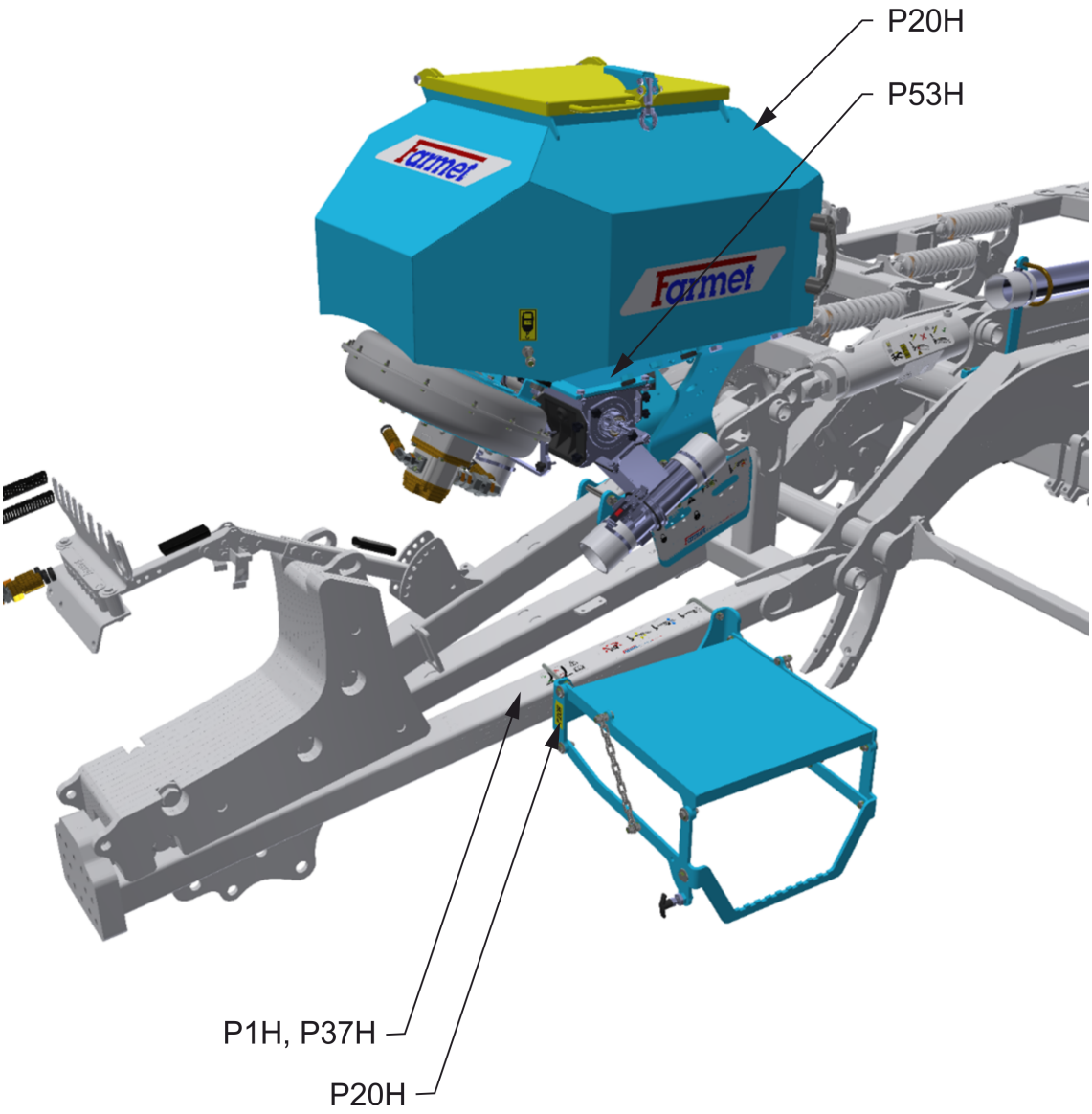
1. Strictly observe the safety warning labels.
2. All safety instructions also apply to other users.
3. If the **Safety label** on the machine is damaged or destroyed, the **OPERATOR MUST REPLACE THIS LABEL WITH A NEW!**

The position, appearance and the exact meaning of the occupational safety labels on the machine are determined in the following tables.

Tab.1 : Self-adhesive safety warning labels are located on the machine

| Positions on the machine | Safety label | Meaning of labels | Label stickers |
|---|---|---|---|
| 1 |  | Before the manipulation with the machine ready the instructions for using.<br>When operating, follow the instructions and safety regulations for operating the machine. | **P 1 H** |
| 2 |  | Stay out of reach when unfolding the service platform. | **P 20 H** |
| 3 |  | Driving and transporting the machine structure is strictly forbidden. | **P 37 H** |
| 4 |  | Do not be close to the rotating parts, unless these are not in calm position that means that they are not rotating. | **P 53 H** |

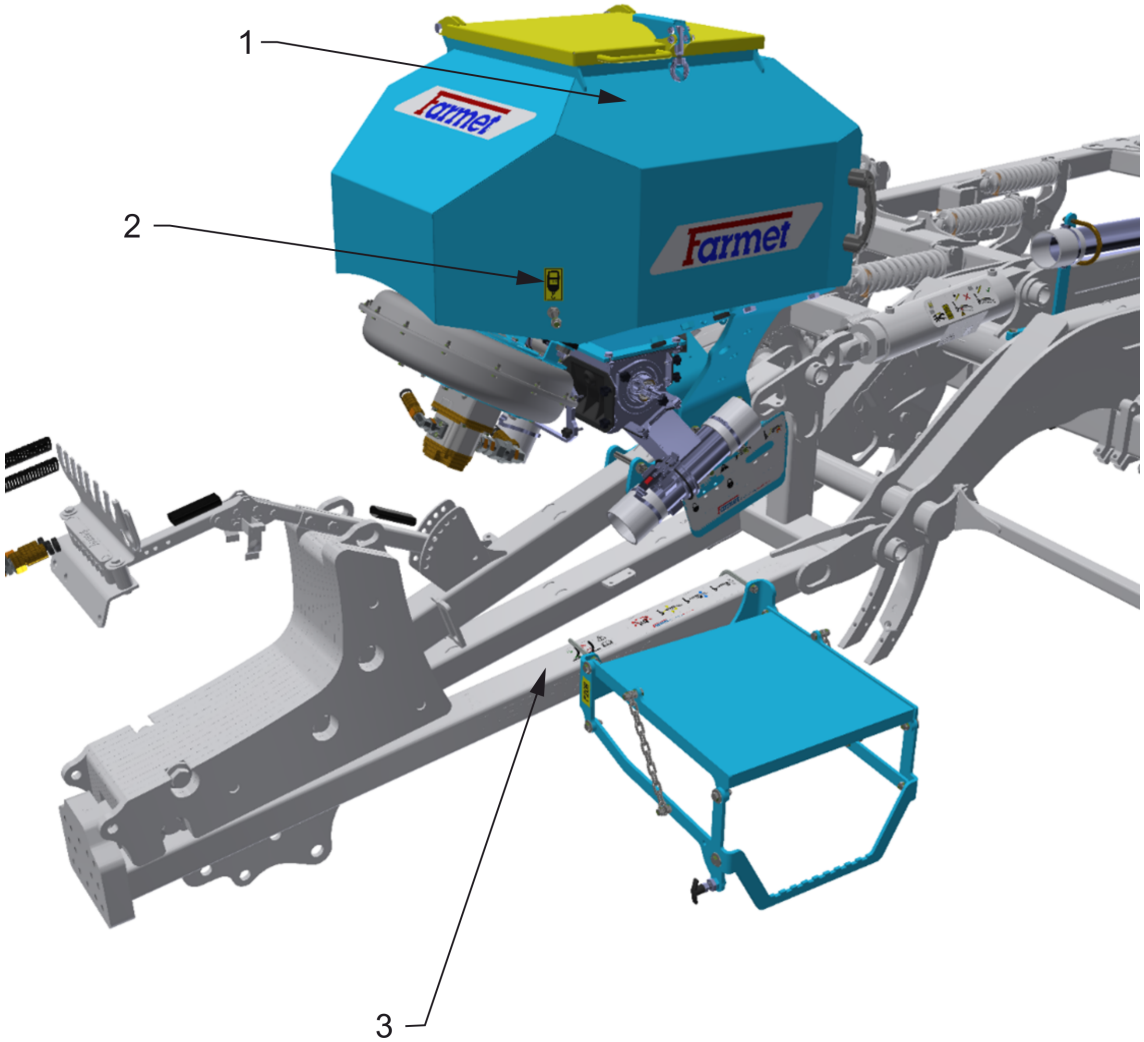
- Position of the safety labels on the machine



Tab.2 : Information labels

| Position number | Label | Label text |
|---|---|---|
| 1 |  | Note to check for proper sealing of the hopper cover. |
| 2 |  | Hanging point for the seeding test scale. |
| 3 |  | Connection of fan hydraulics. |

- Position of the information labels on the machine

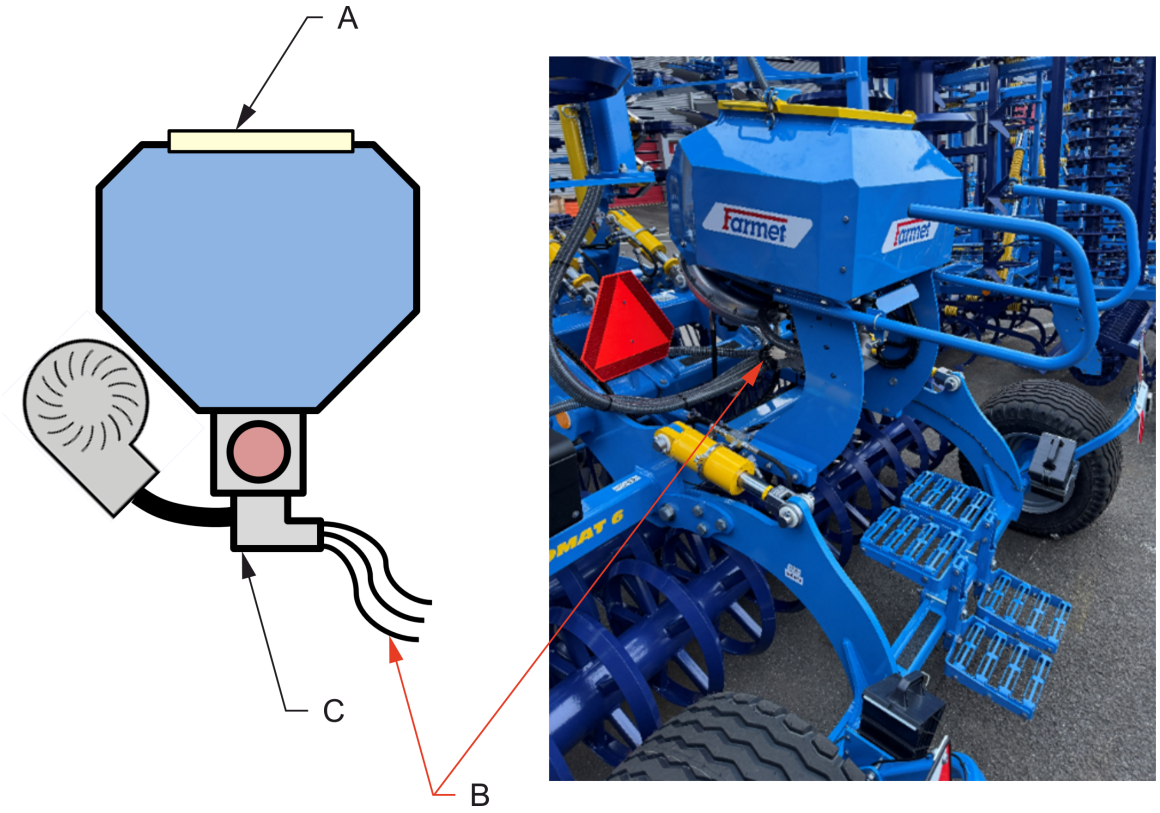


# 8 DESCRIPTION

The **MICRODRILL PRO** pneumatic seeding or spreading device is equipped with a pressure tank and a roller dispenser. The seed is transported by an air stream to the end applicator and applied to the rear of the machine. The dispensers are driven by a 12 V electric motor, which is regulated by a control unit. The fan for seed transport is driven by a hydraulic motor from the hydraulic circuit of the tractor. The electronic system of the machine allows control of machine functions and regulation of the seeding amount. The amount of the seeding dispenser can be conveniently regulated using the control unit from the driver's seat.

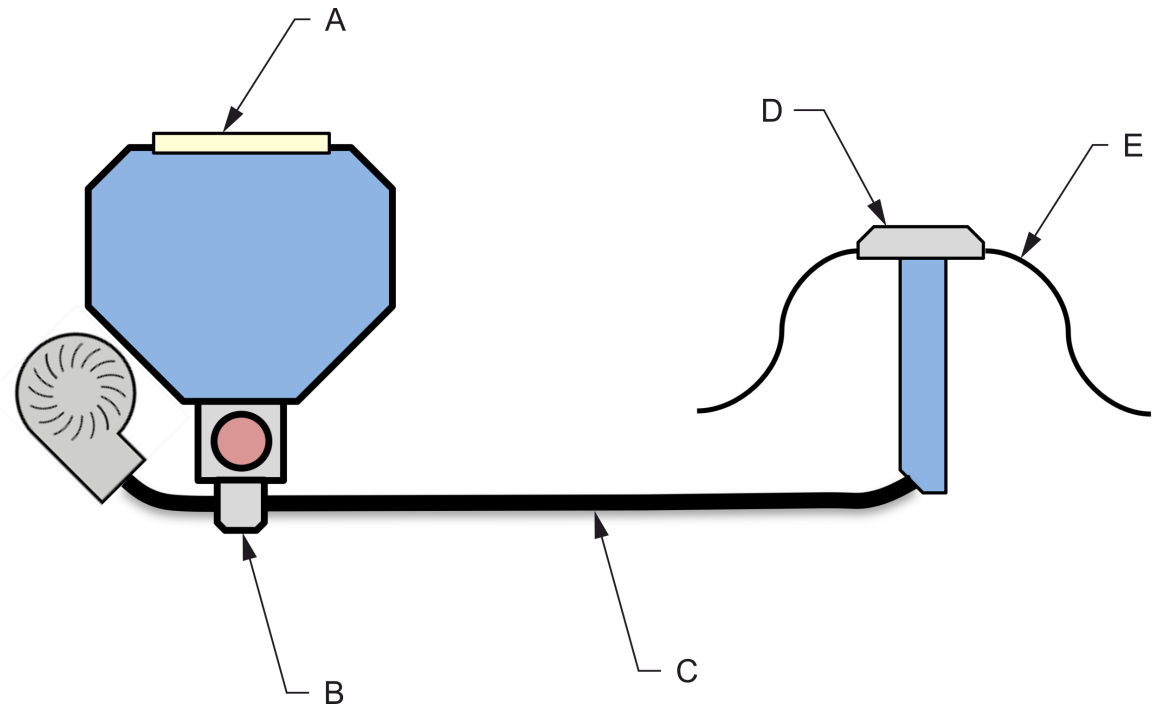
## 8.1 Units MICRODRILL – 2 types

**1.** Mixer that distributes the seed directly into the outlet hoses – in a fixed number of 8 pieces.

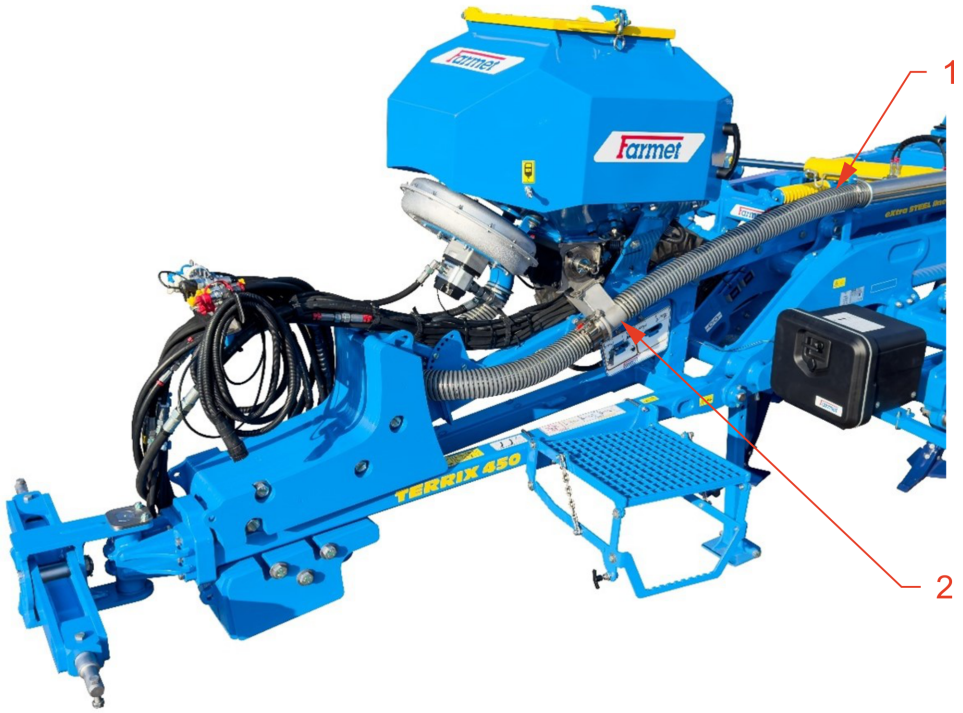


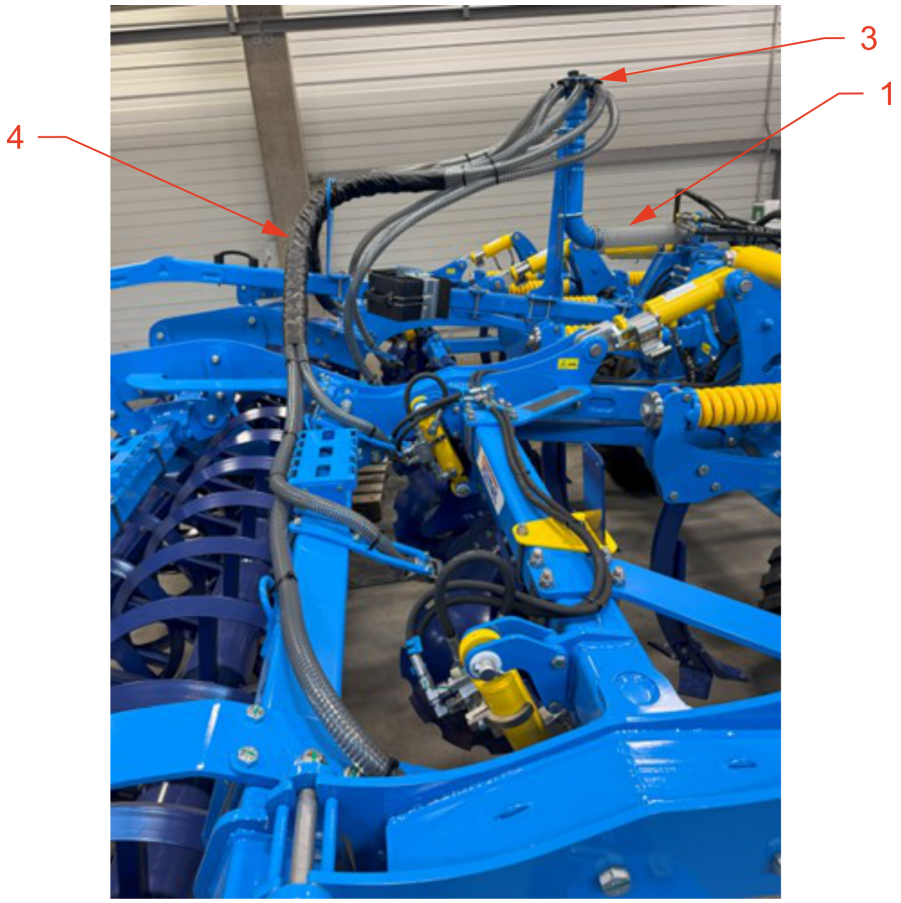

| | |
|---|---|
| A | Hopper |
| B | Outlet hoses |
| C | Mixer + distributor |

**2.**Mixer that sends the seed through a central hose or pipe to a distribution chimney, which distributes the seed into the outlet hoses – in a number of 8 to 16 pieces. The mixer can be off-centre or directly in the axis under the hopper according to the design.




| | |
|---|---|
| A | Hopper |
| B | Mixer |
| C | Central line |
| D | Distribution head |
| E | Outlet hoses |






| | |
|---|---|
| 1 | Central line |
| 2 | Mixer |
| 3 | Distribution head |
| 4 | Outlet hoses |

## 8.2 Filling the seed hopper

- Always observe safety regulations and directives when filling the hopper.
- Always turn off the fan and dispenser drive when filling.
- The machine must be unfolded and placed on the working parts on the ground during filling.
- Fill the tank only on a solid and level surface and when the machine is stationary.

### Opening the lid

- Release the lid clamps.
- Open the hopper lid, hold it with the handle.
- Secure the open lid by pressing the mechanical strut down.

### Closing the lid

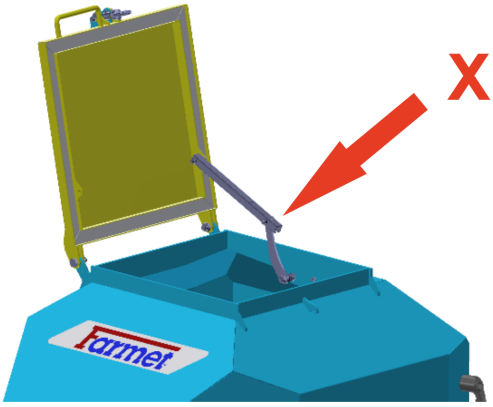
- Release the mechanical strut upwards.
- Close the lid by gripping the handle.
- Secure the clamps, check that the lid is properly seated.

## Footbridge

- The footbridge is intended only for the operator when filling the tank.
- It is strictly forbidden to move on the footbridge while driving and working with the machine.
- The load capacity of the footbridge is limited to **max. 1 person**.
- Exercise increased caution when moving on the footbridge.
- **Exercise increased caution when moving on the footbridge!**

Filling the seed hopper


Securing the lid against unintentional closing .




X – Mechanical strut – securing

## 8.3 Description of hopper

- The volume of the hopper is 300 l / 500 l / 800 l
- If the level drops below the sensor, an alarm will be displayed on the monitor
- If the upper sensor is activated (low level in the hopper), approximately 10% of the seed volume remains
- If the lower sensor is activated, the hopper is empty

## 8.4 Tightness of the pressure hopper

### 8.4.1 Adjusting the sealing of the hopper lid

**The lid has a seal around its perimeter to ensure overpressure. If air escapes through the lids, it is necessary to check the integrity of the seal and whether the lid is sufficiently pressed down.**

Clamp adjustment

- If air escapes on the clamp side, it is possible to increase their prestress.
- The clamps are opened and closed manually using a lever, both clamps on the lid must have approximately the same pre-load.
- Loosen the lock nut and adjust the required pre-load by turning the eye (Fig. 1).
- Secure the eye again with the nut.

Pressing the lid at the hinge

- On the hinge side, there are three clamps that increase the pressure on the lids with a screw through the arm (Fig. 2).
- The pre-load of the screws can be adjusted after loosening the lock nut.
- Tightening the screw increases the pressure on the lid.
- The pre-load of all screws must be approximately the same.
- The screw can be moved sideways in the holder so that it is always in the centre of the arm.

**Fig.1**

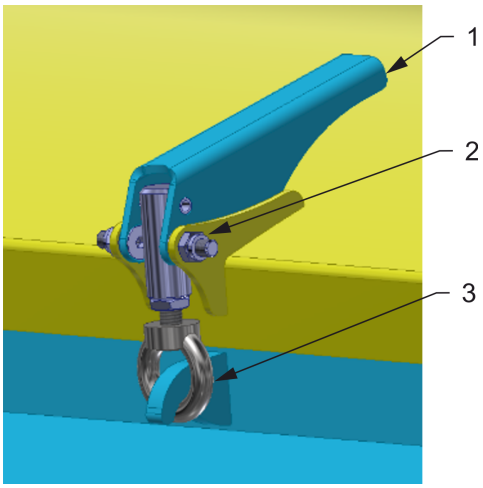
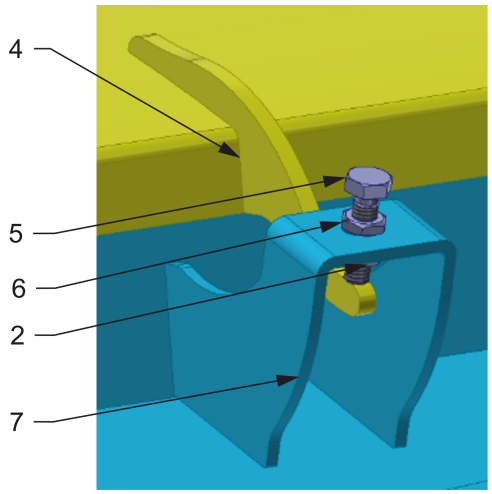



**Fig.2**




| | | | |
|---|---|---|---|
| 1 | Lever | 5 | Bolt |
| 2 | Nut | 6 | Locking nut |
| 3 | Eye | 7 | Holder |
| 4 | Arm | | |

### 8.4.2 Hydraulics connection

- Only connect the hydraulic hoses of the machine when the hydraulic circuits of the machine and the tractor (unit) are depressurized.
- The hydraulic system is under high pressure.
- Regularly check all lines, hoses and fittings for leaks and obvious damage. Eliminate any defects immediately.
- When searching for and removing leaks, use only suitable aids, protective goggles and gloves are the basis.
- Use the plugs (on the machine) and sockets (on the tractor) of quick couplings of the same type to connect the machine hydraulic system to the tractor. Connect the quick couplings of the machine to the hydraulic circuits of the tractor according to the table below.

| | Function | Coupler | Circuit color | Operation | Setting of oil flow l/min. | Continual flow |
|---|---|---|---|---|---|---|
| | Backflow | ISO 20 | O | Free flow to tank | / | ✓ |
|  | Microdrill PRO | ISO 12,5 | OO | Pressure | 15 – 20 | ✓ |

**To prevent involuntary or any stranger mistaken hydraulics movement, the control cabinets on the tractor must be secured or locked when not in use or in the transport position.**

**It is forbidden to disassemble parts of the machine hydraulic system that are under pressure. Hydraulic oil that penetrates the skin under high pressure causes of injury, seek medical advice immediately.**

**<u>It is necessary to set 100% hydraulic oil flow for the hydraulic circuit (blue circuit).</u>**

### 8.4.3 Connection of the electronic part of the machine

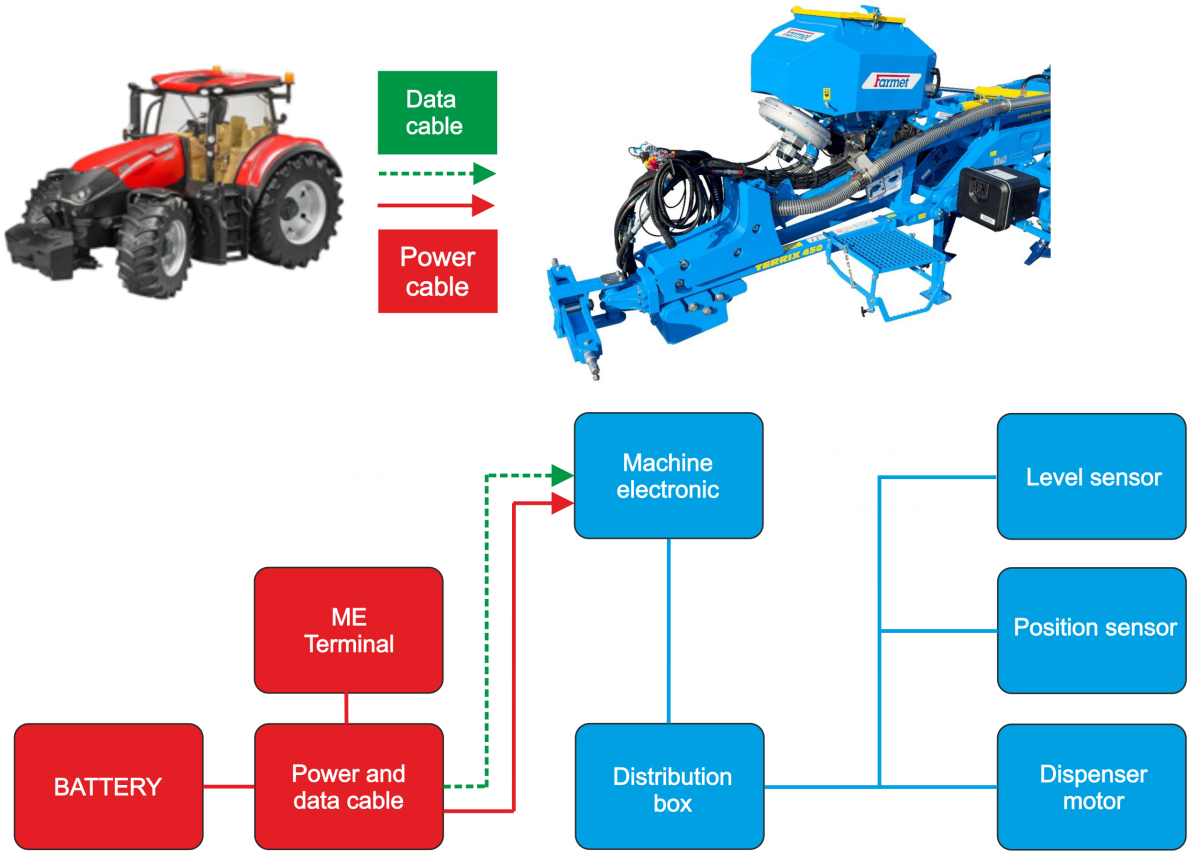
1. Connection to the tractor battery + Müller terminal 8.4.3.1
2. Machine connection via ISOBUS tractor socket + Müller terminal 8.4.3.2
3. Machine connection via ISOBUS tractor socket + Tractor terminal 8.4.3.3

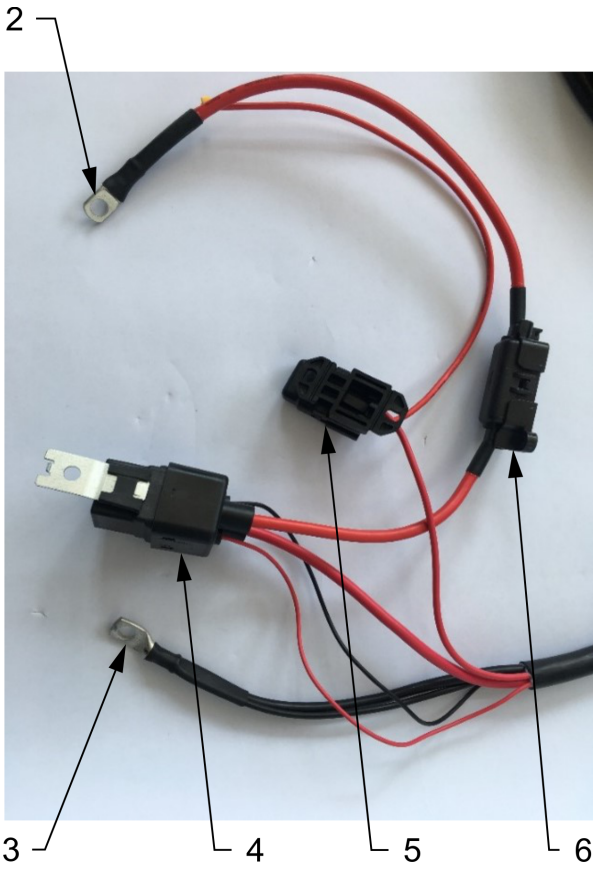
### 8.4.3.1 Connection to tractor battery + Müller terminal

- The electronic unit of the machine only connect when the tractor is at standstill, secured against movement and against the intervention of strangers.
- Use the power cord supplied with the machine to connect the electronic unit. The connecting cable must be connected directly to the tractor battery!
- Place the terminal in the tractor in a place where it will not obstruct the driver's view and at the same time be in the operator's field of vision.
- Secure the wiring securely to prevent mechanical or thermal damage.
- To connection cable set contains a voltage relay, which is switched by a cable that is ideally attached to the ignition of the tractor, or to 12 V switched. This relay switches the communication between the machine control unit and the terminal.

- If welding is required on the machine or tractor disconnect the unit from the power supply and disconnect the connecting cables.

- Never replace the fuse with another object and always replace it with a fuse with the same fuse when replacing it.



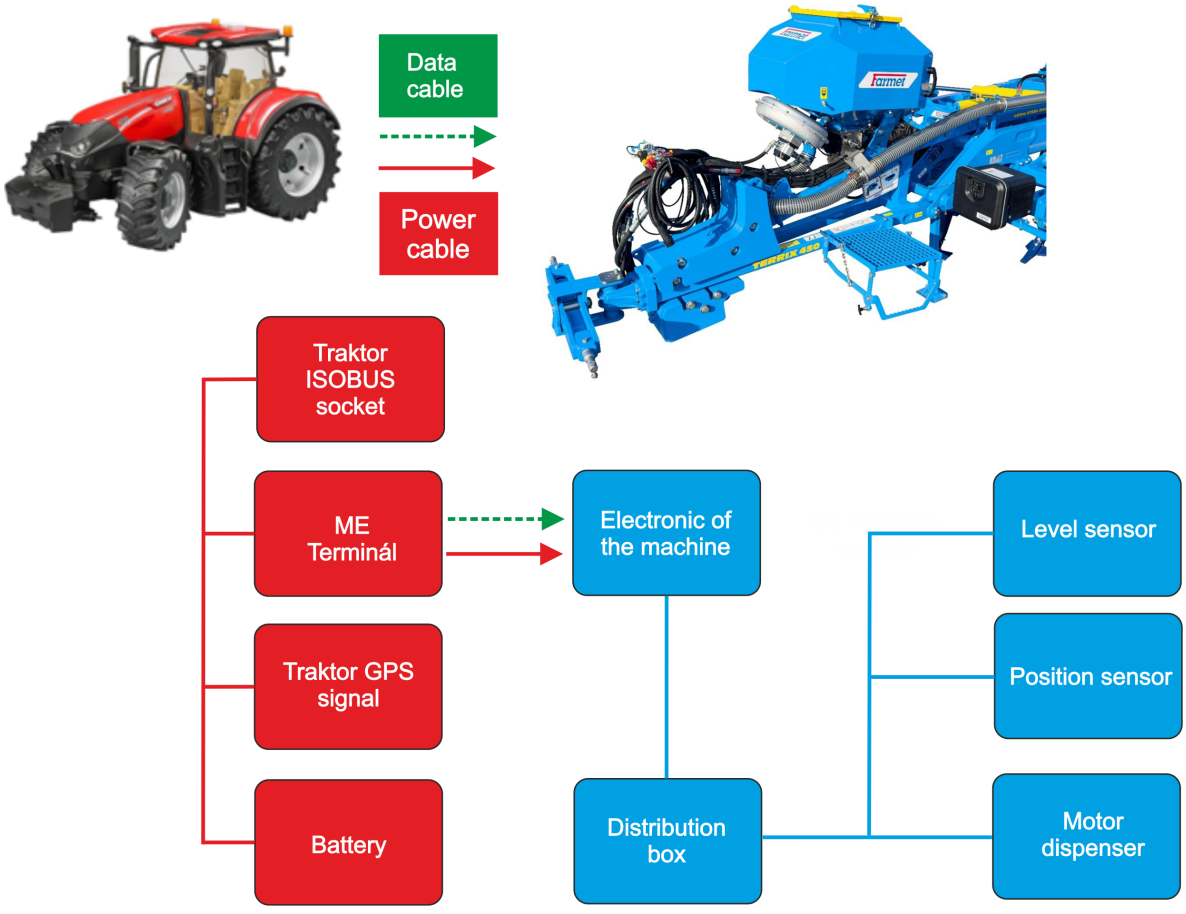




| | | | |
|---|---|---|---|
| 1 | Terminal | 6 | Fuse 50 A |
| 2 | Positive battery pole „+“ | 7 | ISO socket |
| 3 | Negative battery pole „-“ | 8 | Fuse 1 A |
| 4 | Voltage relay | 9 | Ignition contact for relay switching |
| 5 | Fuse 15 A | 10 | Terminal connection cable |

Due the disconnection of the unit from the battery, it is necessary to connect the ignition contact for closing the relay (9) **to the ignition of the tractor, or to the switched 12 V (voltage 12 V switched by the key or switch).**

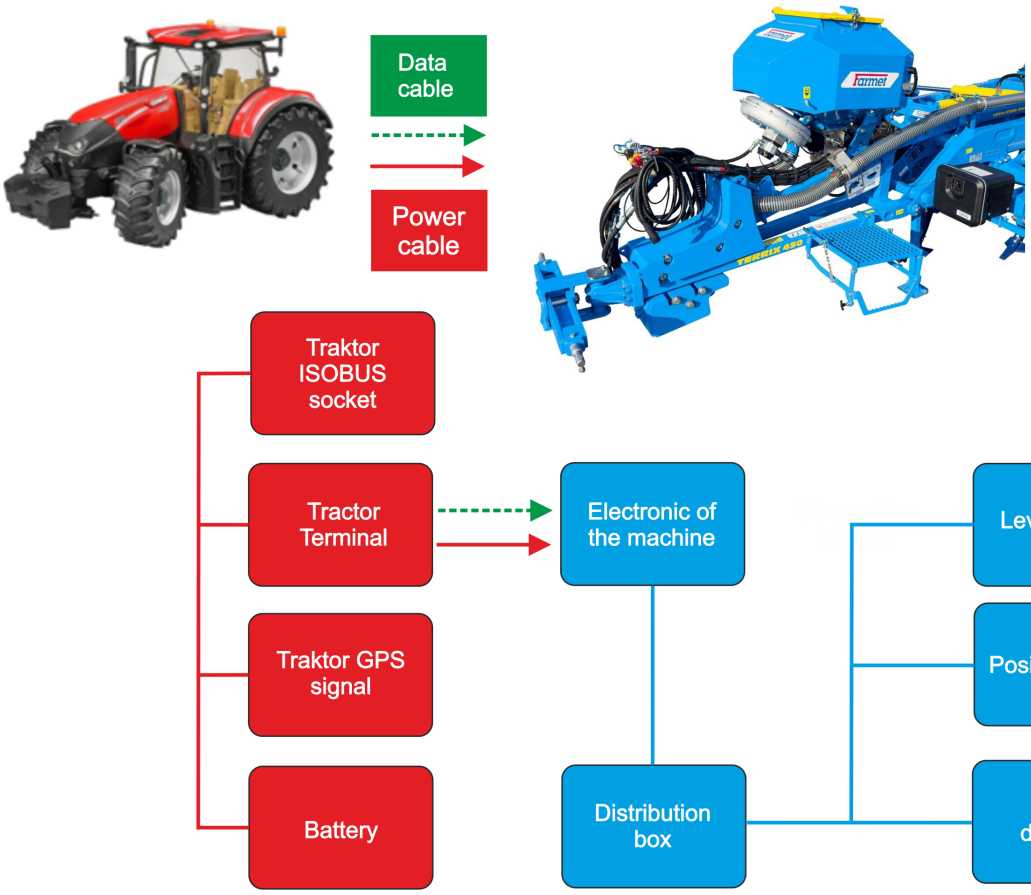
### 8.4.3.2 Connecting the machine via the ISOBUS socket of the tractor + Müller terminal

- Connect the machine plug to the ISOBUS socket of the tractor.
- Use the reduction cable of the terminal and connect to the IN-CAB socket of the tractor and connect the terminal.
- For this use it is necessary to set the terminal as VT 1, you can read this in the chapter **VT a TC settings chapter-** 8.4.3.4.



### 8.4.3.3 Connecting the machine via the tractor's ISOBUS socket + Tractor terminal

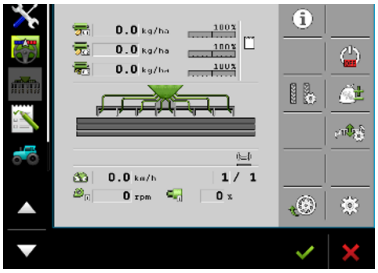
- Connect the machine plug to the tractor socket.
- ISOBUS VT must be switched on in the tractor settings.
- The machine application is loaded in the tractor ISOBUS application after 2-5 minutes (communication between the tractor and the machine must take place first).

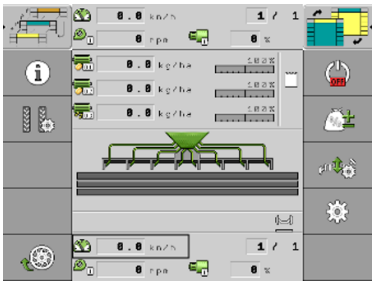


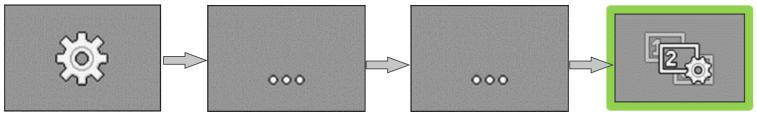
### 8.4.3.4 Selecting and setting up the virtual terminal (VT) and task manager (TC)

Touch Basic

1.  Turn on the application

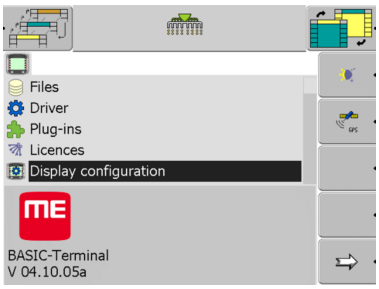


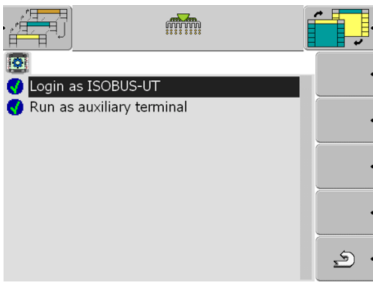


2. 

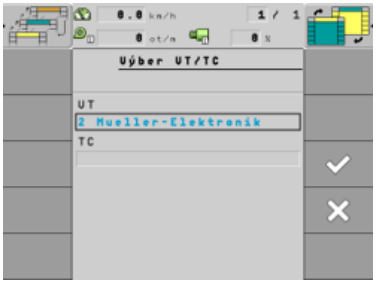
3. Select which virtual terminal you want to use (VT), for example **Mueller** or **another terminal**

   - For the basic terminal, it is necessary to select in the settings that it also work as a secondary terminal.




4. Select which task manager you want to use (TC), such as **Mueller** or **other terminal**

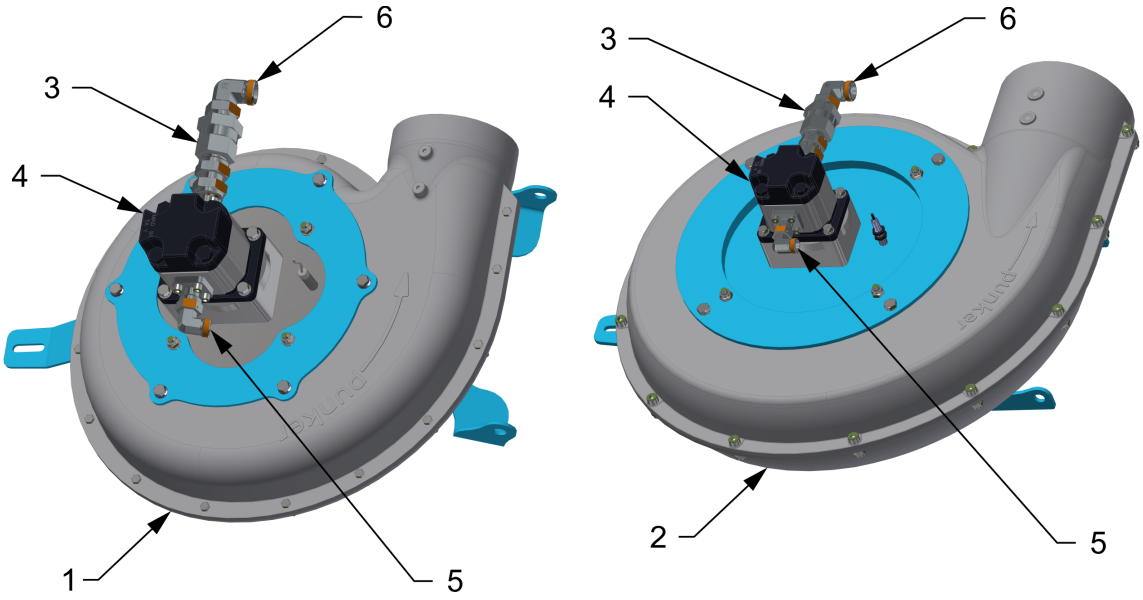

5.  Confirm

   - Settings of virtual terminal and task manager is complete.

# 9 MACHINE FAN

- The hydraulic drive of the fan is driven directly from the tractor switchboard.
- It is necessary that the fan drive is connected to the tractor's priority circuit to ensure that the fan speed does not drop in any sense.
- The fan speed is set directly in the tractor by regulating the oil flow of the circuit.

- Replacing of the quick coupling for the non-pressure return with less than ISO 20 is unacceptable.



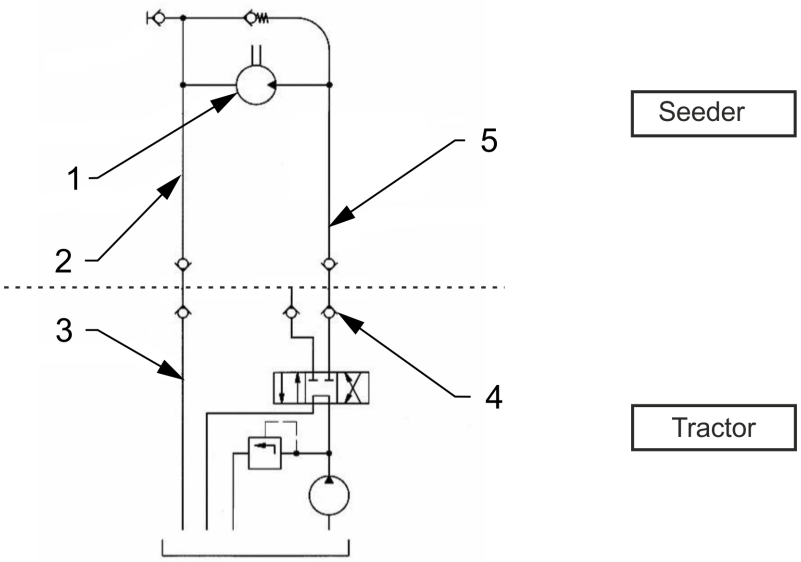

* See chapter **1**for your machine configuration.

| | | | |
|---|---|---|---|
| 1 | Small fan **V1** | 4 | Hydraulic motor |
| 2 | Big fan **V2** | 5 | Pressure hose ISO 12,5 (P) |
| 3 | Reverse throttle valve | 6 | Non-pressure return ISO 20 (T) |

| | | | |
|---|---|---|---|
| Hydraulic fan motor | Hydraulic engine capacity per revolution | | 8 $cm^3$/rev. |
| | Big fan | Maximum speed | 4000 (rev. /min.) |
| | | Minimum speed | 1000 (rev. /min.) |
| | Smal fan | Maximum speed | 4500 (rev. /min.) |
| | | Minimum speed | 1000 (rev. /min.) |
| Pressure branch (P) | Minimum pressure in the pressure hose | | 130 (bar) |
| | Maximum pressure flow in the pressure hose | | 50 (l/min.) |
| Non-pressure return **(T)** | Maximum pressure in the non-pressure return | | 5 (bar) |

In case, if free waste is not fitted to the tank as standard on the tractor, contact the tractor manufacturer (dealer), who will provide you with information on the options for the free waste terminal.

- Hydraulic connection of the fan drive




| | | | |
|---|---|---|---|
| 1 | Fan hydraulic motor | 4 | Quick coupler of tractor switchboard |
| 2 | Non-pressure return ISO 20 (T) | 5 | Pressure hose 12,5 (P) |
| 3 | Non-pressure return in the tractor tank | | |

Farmet a.s. is not liable for damage to the hydraulic drive or tractor caused by incorrect connection of the hydraulic drive.

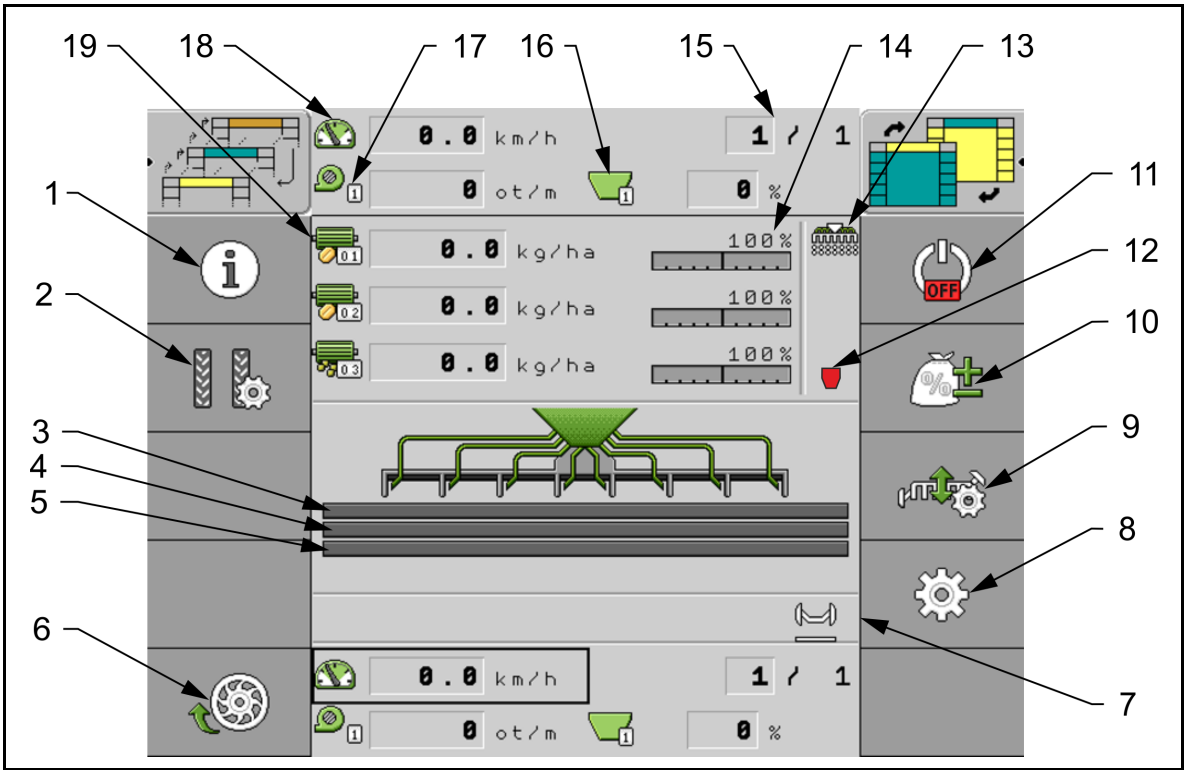
# 10 SEED SWITCHING SENSORS

- Spínání a vypínání výsevu je řízeno dvěma snímači.
- Okamžik sepnutí a vypnutí výsevu závisí na poloze čidla, které je nastaveno z výroby.
- Pokud je použitý systém ISOBUS, je možné nastavit spínání a vypínání výsevu z terminálu traktoru dle požadavku traktoristy.

# 11 ELECTRONIC MACHINE CONTROL MÜLLER ELECTRONIC

- The electronic system controls all functions that are connected to the blue hydraulic circuit.

## 11.1 Work screen

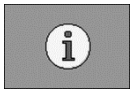



| | | | |
|---|---|---|---|
| 1 | Job information | 11 | Turn off the work application |
| 2 | Tramline settings | 12 | Empty tray indication |
| 3 | Motor 1 (dispenser) | 13 | Sensor information field (machine in working position) |
| 4 | Motor 2 (dispenser) | 14 | Adjusted target dose field in % |
| 5 | Motor 3 (dispenser) | 15 | Trip counting for tramlines |
| 6 | Site sowing function | 16 | Current state of the hopper 1/2/3 (can be changed) |
| 7 | Fields of active functions (markers, obstacle, swamp) | 17 | Speed of fan |
| 8 | Settings | 18 | Travel speed of the machine |
| 9 | Control of hydraulic functions of the machine | 19 | Dispenser dose information 1/2/3 |
| 10 | Sowing rate correction | | |

| | | | |
|---|---|---|---|
|  | Beacon is activated |  | Both markers activated manually |
|  | Hopper lights are activated |  | Manually activated left marker |
|  | Working light is activated |  | Manually activated right marker |
|  | Function swamp is activated |  | Markers are deactivated |
|  | The dispensers are filled with seed |  | Automatic markers (first left) |
|  | ISOBUS-TC is activated |  | Automatic markers (first right) |
|  | Section-Control is activated, including GPS |  | Obstacle function |
|  | Hopper is empty |  | Working speed of the machine |
|  | Machine is in working position |  | A tramline is being created |
|  | An earlier engine stop is activated |  | Calculated system pressure |

***All icons on the terminal side are function keys (two-column image).**

## 11.2 Information

1. On the work screen 

| Function icon | Meaning |
|---|---|
|  | Resetting the daily counter |
|  | Counter summary information |
|  | Task list (TASK) |
|  | Total stack counter |

- **Area** – The area on which the machine was in the working position
- **Quantity** – Applied amount
- **Area performance** – Applied area per hour

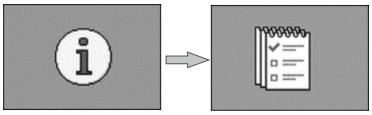
2. 

- Counter summary information

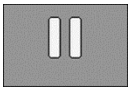
- **Operating hours** – Period time for which the computer is turned on
- **Total hours** – Period time, which the machine was working for
- **Total distance** – Worked distance
- **Total area** – Worked area
- **Area performance** – Applied area per hour

## 11.3 Creating a task with a computer

- This function allows you to create an order, for an overview of information about the work performed.

1. On the working screen. 

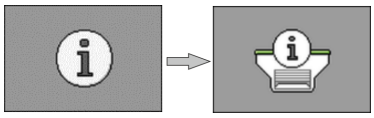
- **Order** – Select an existing one or create a new task
- **Rename** – Here you can name the order
- **Product** – Here we assign the product (**MOTOR / SEED / FERT**).

2. After the end of contract 

3. It is possible to reset the counter 

## 11.4 Remaining calculated amount in the hopper

- On the screen Results / The hopper will see counters that show the amount remaining in the hopper and how much work can still be done with the remaining contents of the hopper.

1. On the working screen . 

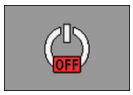
- **Leftover amount** – Remaining sum in the hopper.
- **Leftover area** – OArea where you can still work with the remaining sum in the hopper.
- **Leftover track** – The distance that can still be traveled with the remaining sum in the hopper.

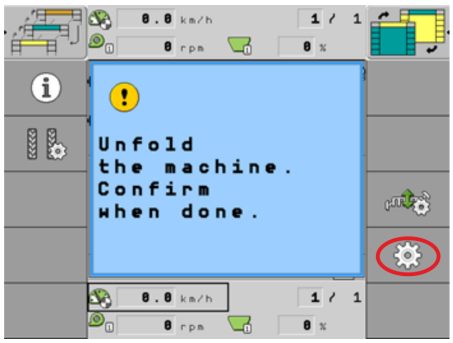
2. Use to return to the work screen 

## 11.5 GPS settings for machines when unfolding in the hall

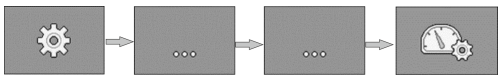
For service purposes of the machine in the hall, it is necessary to set the simulated speed to 0 km/h when unfolding the machine in the hall.

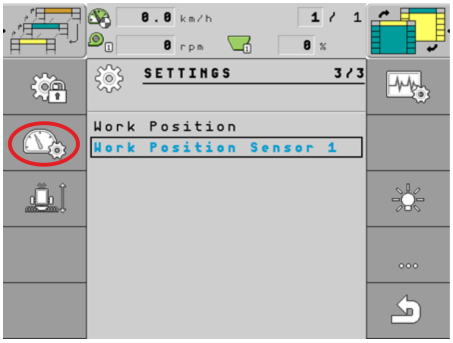
1. Turn off the application



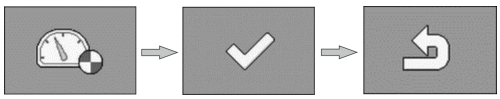



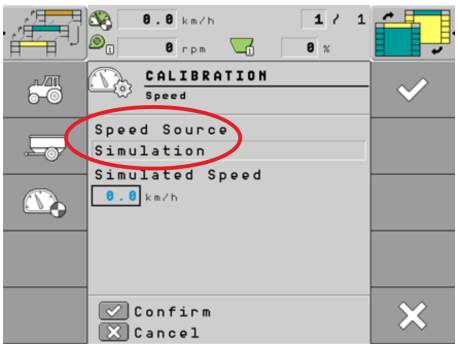

2.

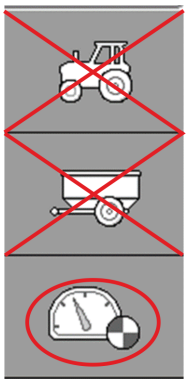





3.



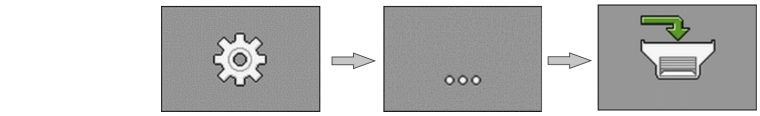


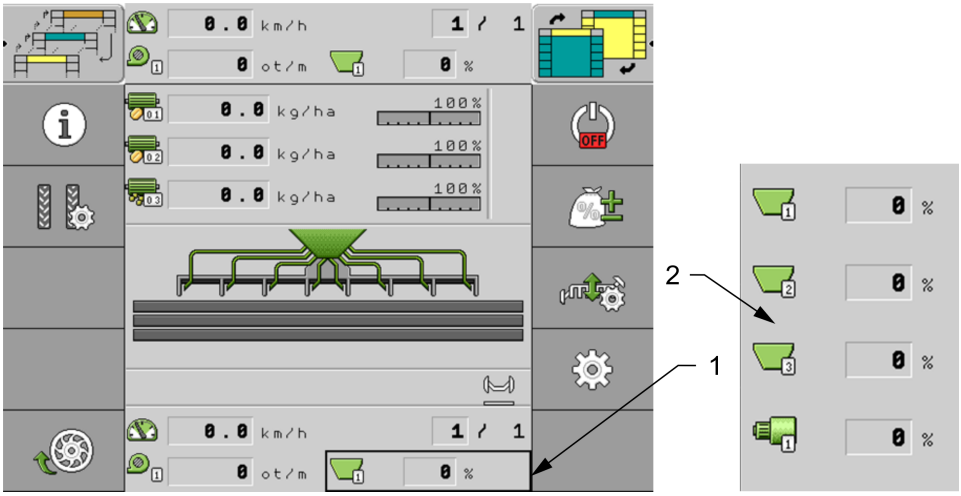
**Set the speed source to 0 km/h! Switch back to the workload when the machine is fully deployed.**

## 11.6 Enter the hopper fill

- The system allows the calculation of the tank status in real time, based on a calibration test. This function is not necessary for the correct operation of the machine.

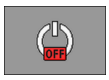



| | | | |
|---|---|---|---|
| 1 | Current residual amount in the hopper | 3 | Maximum filling of the tank |
| 2 | Write the quantity poured into the hopper here | 4 | Resetting the state in the hopper |



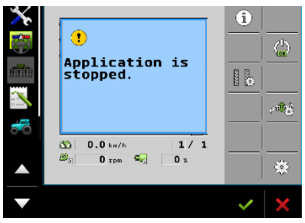

| | | | |
|---|---|---|---|
| 1 | Hopper 1 status indicator in % based on sowing test | 2 | Open menu of real-time values (choose which ones I currently want to display) |

## 11.7 User product database

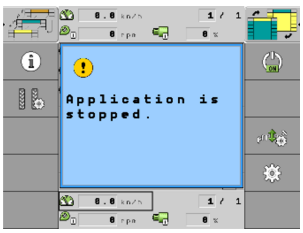
1. 

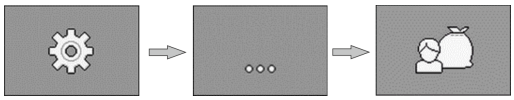
- Shutting down the application

Touch




Basic




2. 

**Product**

- Here I choose which motor I want to modify (motor 1/2/3, nebo Seed/Fertilizer) according to the machine configuration.

**Rename**

- Here you can rename the product.

**Type of product**

- For the engine, select the product type seed / solid fertilizer / liquid fertilizer / undefined.

**Note**

- Here you can enter any note, for example MARGED.

**Adapt**

- Here it is possible to set a percentage value by which the required dose value can be changed manually during work.

  **Example:** 1 x press by 10%, 2 x press by 20%

**Gear ratio**

- If there is a gear behind the outlet shaft motor, it must be entered here. The motor shaft speed is entered first and then the metering unit speed.

  **Example:** 2 rev. motor / 1 rev. dispenser

**Level alarm**

Low / Empty – Only if two sensors are used one above the other for one dispenser.

Empty – In case of using one sensor for the dispenser.

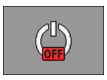
Deactivate – To deactivate the dispenser sensor.

Deviation tolerance

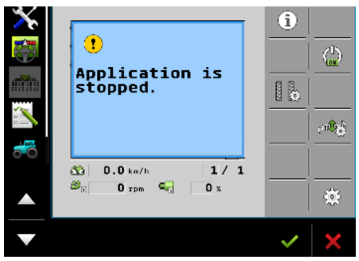
- For each motor, enter the deviation from the required dose above which an alarm should be triggered.
- For a precision seed machine the deviation tolerance applies to each row.
- The left value applies to the upward deviation and the right value to the downward deviation.

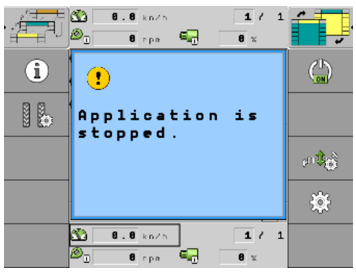
## 11.8 Acoustic Signal When Seeding Is Interrupted

Touch Basic



- Turning off the application



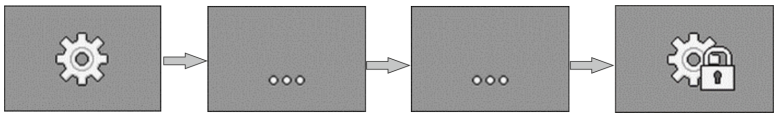



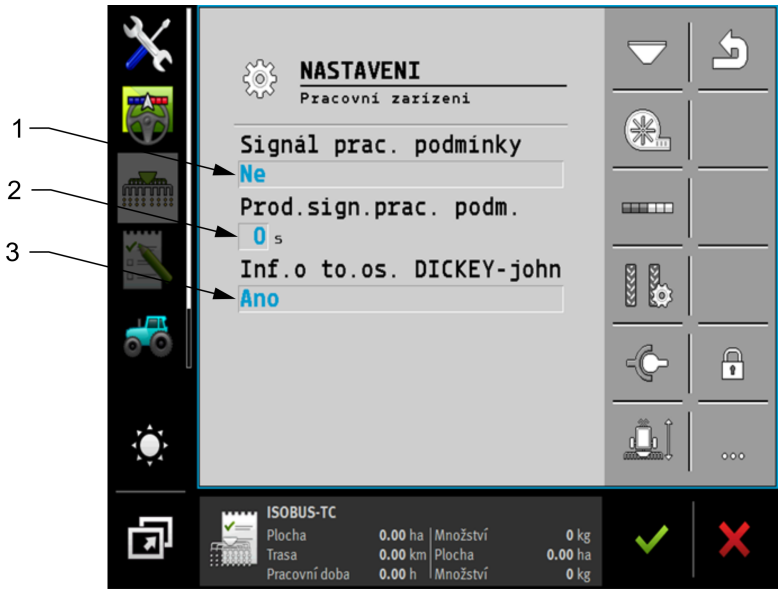

- The system is equipped with acoustic signalization in case one of the seeding conditions is not met

The working conditions include :

- Activated application
- Fan speed over 1,000 RPM.
- Information on the speed from the GPS sensor
- Active working position of the seed drill

- When any of the conditions is not met, the machine does not seed and the operator is notified by an acoustic signal.

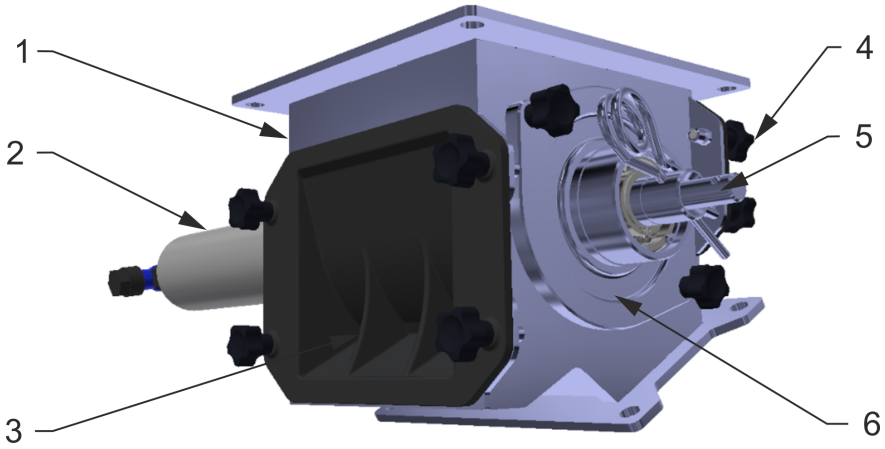


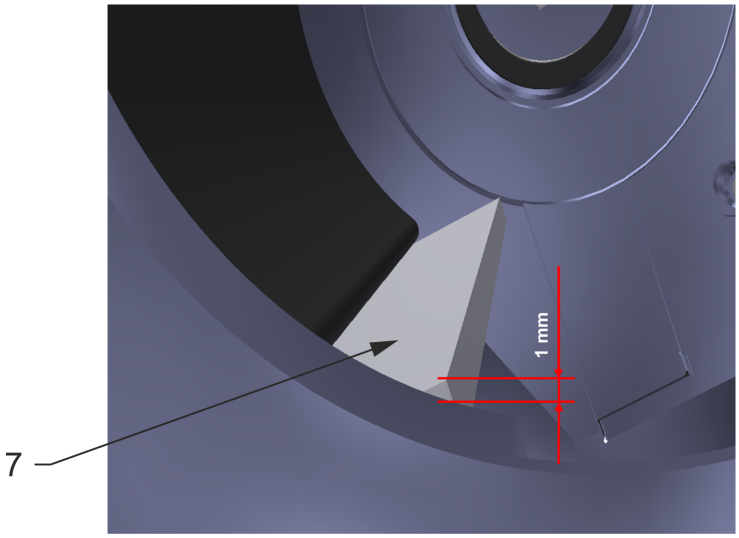



| | |
|---|---|
| 1 | Signalling on/off |
| 2 | Signalling activation delay |
| 3 | Dickey-john sensor setting, see chapter 14.14 |

# 12 FARMET DISPENSER

- Dispenser with roller change system.




| | | | |
|---|---|---|---|
| 1 | Body of Farmet dispenser | 5 | Dispenser shaft |
| 2 | Drive motor | 6 | Side cover with roller mounting |
| 3 | Dispenser front with bottom trowel | 7 | Lower roller trowel |
| 4 | Dispenser front with top trowel | | |

It is necessary to check both trowels of the dispenser rollers every day before work Any sign of deformation and loss of trowel material can lead to inaccurate dose requirements. The trowel can be rotated and used from the other side. In case of damage to both sides, we recommend purchasing a new part.
**The trowel must extend 1-2mm beyond the edge of the circular opening of the dispenser.**

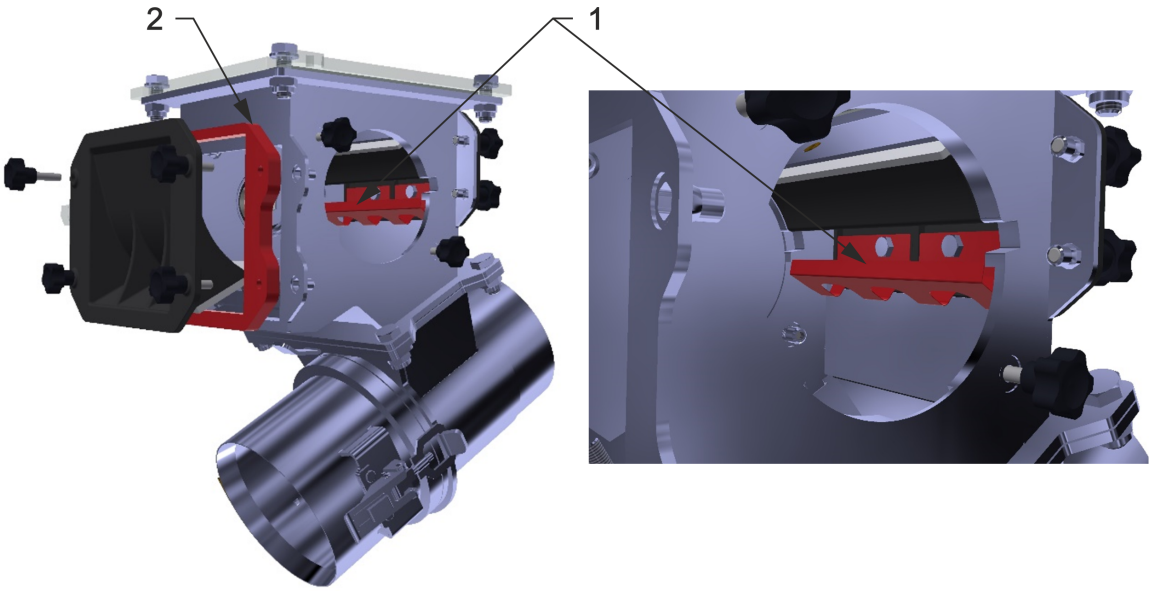
PBefore each use while standing, it is necessary to check the cleanliness of the roller and the dispenser. The roller must rotate freely in the metering unit. If dispenser gets stuck, there is a risk of breaking the fuse of the dispenser motor.

## 12.1 Functional test of the dispenser

1. After installing a new roller, the function, centering and smooth running must be checked.
2. To start the roller, use the metering fill function or the sowing test.
3. The drive motor must run evenly “smoothly".
4. Check clutch centering. If running unevenly, the dosing is inaccurate and the motor can be overloaded.
5. At the point where the roller cuts, repair them, they must be reground or returned.
6. Loosen the screws on the side covers for the drive motor and roller bearing, and realign the side covers to prevent stress.
7. If the drive shaft is bent, it must be aligned or replaced.
8. If foreign bodies are stuck between the roller and the metering housing, they must be removed.
9. If there is dust or mordant in the roller between the metering discs and the spacer roller, disassemble and clean the roller.

## 12.2 Dispenser function test

- For sowing rough seeds (corn, beans. peas, etc.) it is necessary to adjust the metering unit.
- The deflector (1) prevents large seeds from getting stuck between the metering cover and the roller. Failure to install the deflector could damage the roller, metering unit, or motor.
- For very large grains, a large seed adapter (2) can be fitted. This makes it easier for large grains to enter the dispenser and prevents grain damage.
- If necessary, add talc or graphite powder to the seed. Some types of large seeds do not spread well and may not completely fill the roller holes.

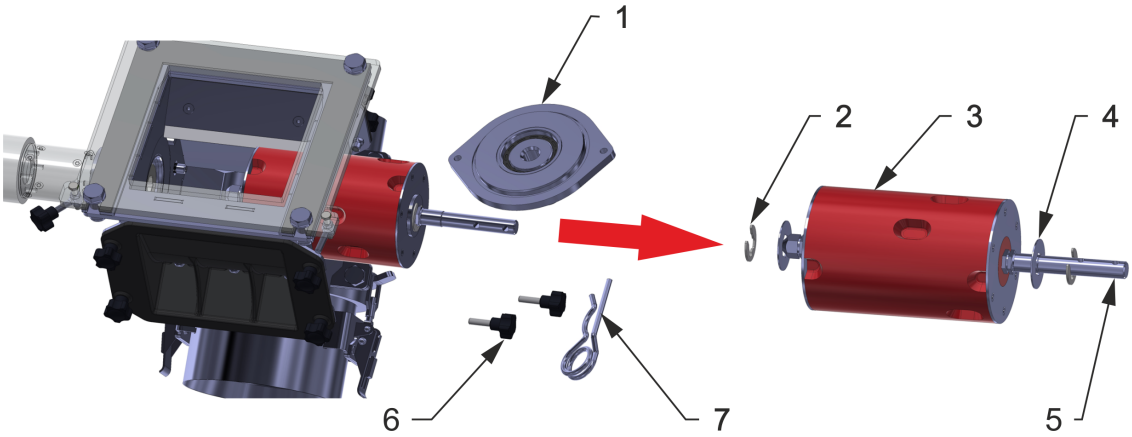


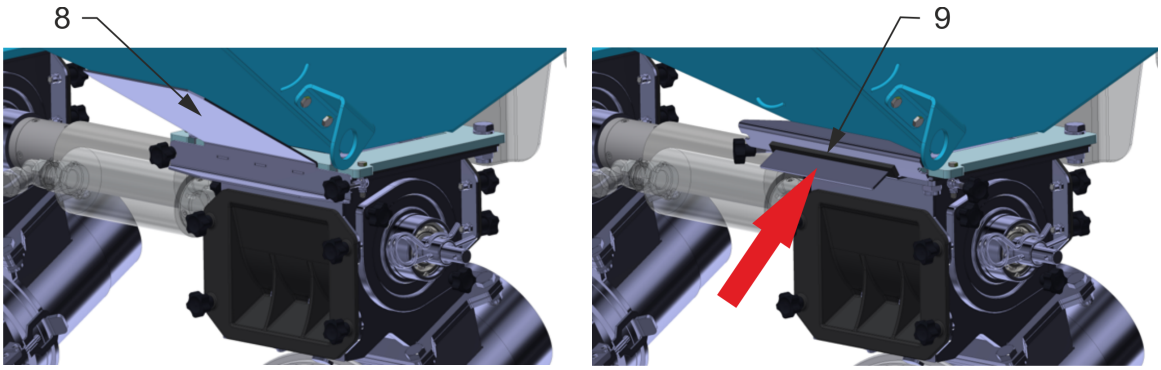

| | | | |
|---|---|---|---|
| 1 | Deflector for large seeds | 2 | Adapter for large seeds |

- When using the adapter for large seeds, it is necessary to use longer fixing screws L= 30 mm (accessories of the adapter frame).
- **Deflector set with an adapter for large seeds is part of the machine accessories.**

## 12.3 Roller replacement

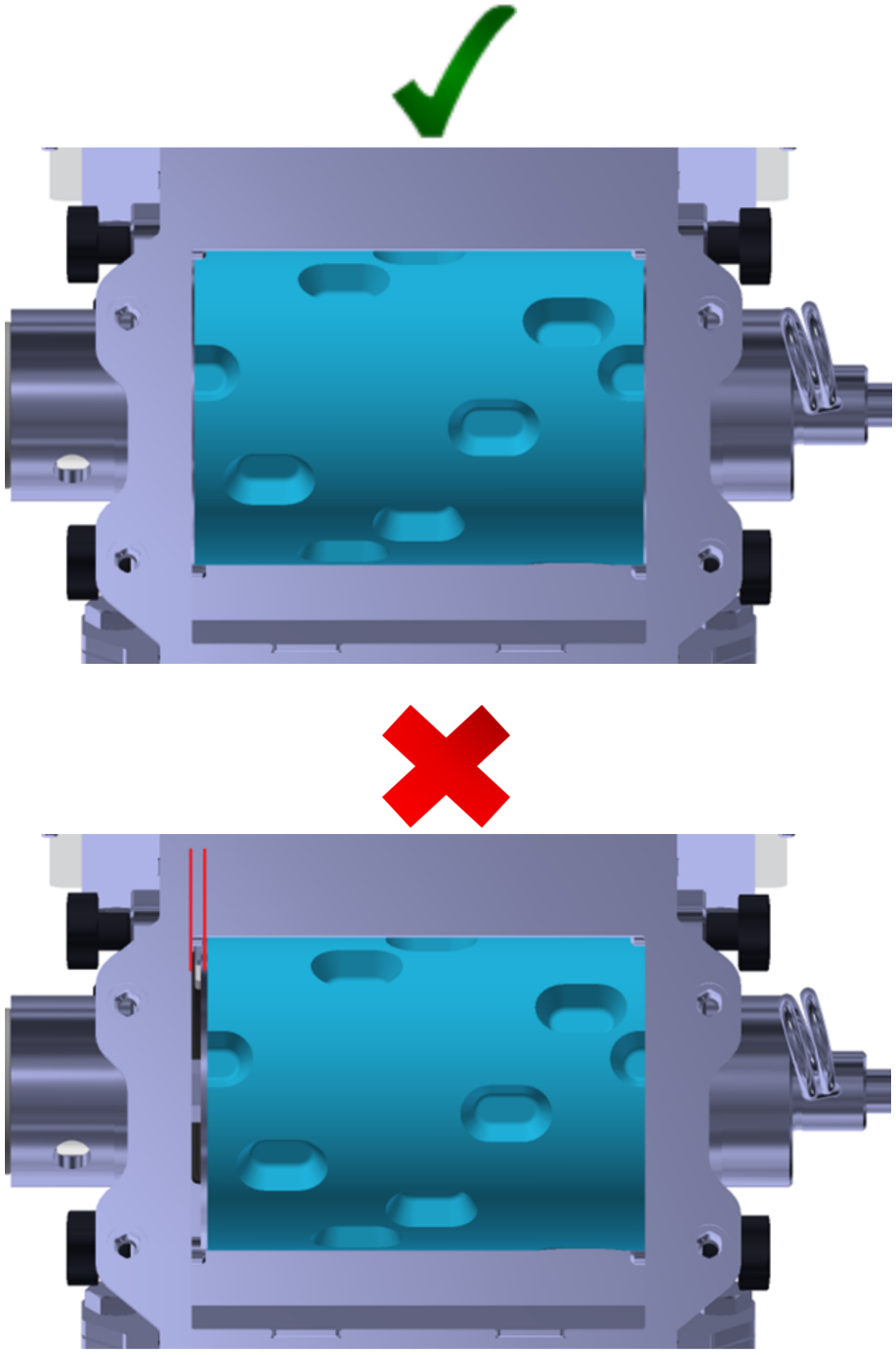
- After selecting the roller according to the table, the roller must be mounted in the metering unit.
  1. With the full hopper, slide the slider over the dispenser (9).
  2. Remove the screws (6) on the side cover of the metering roller (1).
  3. Remove the roller (3) with drive shaft (5) and the side lid (1).
  4. Remove the cotter pin (7).
  5. Remove the secure ring (2) and cover washers (4).
  6. Pull out the shaft (5) roller and mount it on a new roller. Keep the washers (4) on both sides of the roller!
  7. Secure the roller (3) with secure rings (2).
  8. Insert the roller (3) into the dispenser.
  9. Replace the side cover (1) and tighten the screws (6).
  10. Secure with a cotter pin (7) (the first hole on the shaft).
  11. Pull out the slider (8) and secure him to be sure that dispenser seals.
- After each roller change, the trowel settings and the centered operation of the roller must be checked.



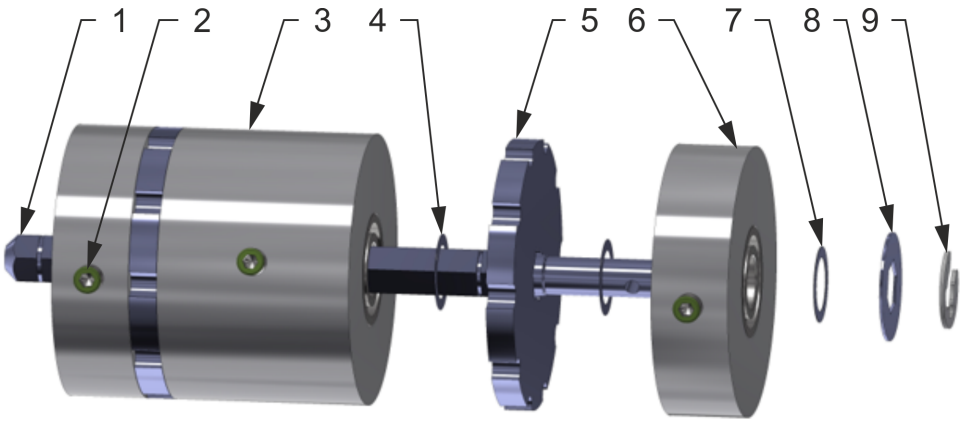

| | | | |
|---|---|---|---|
| 1 | Side cover of the dosing roller | 6 | Screws |
| 2 | Secure ring | 7 | Cotter pin |
| 3 | Dosing roller | 8 | Closing slider in open position |
| 4 | Cover pad | 9 | Closing slider in closed position |
| 5 | Dosing roller shaft | | |

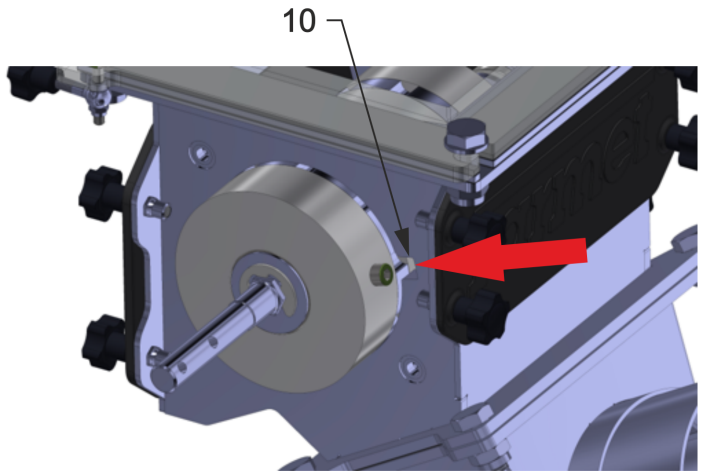
**The cover washers** (4) must be arranged so that the roller in the middle of the dispenser frame after assembly. See picture below.



## 12.4 Rollers for fine seeds

- The fine seed rollers consist of metering discs, spacer rollers and a drive shaft.
- The rollers can be mounted with one or two dosing discs.
- With the two dosing discs on the roller, the spread rate is doubled.
- The dosing disc is available with a dosing volume 3,5 $cm^3$, 9 $cm^3$.
- When sowing, only the metering discs in the roller rotate. The spacer cylinders are blocked stops on the housing.
- When assembling and disassembling the rollers, the screws (2) must be turned into the recess (10) in the dispenser body.

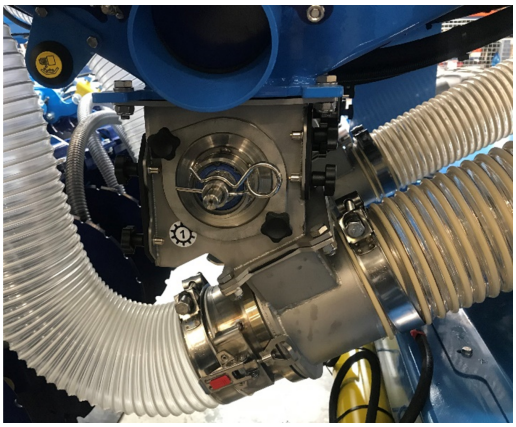


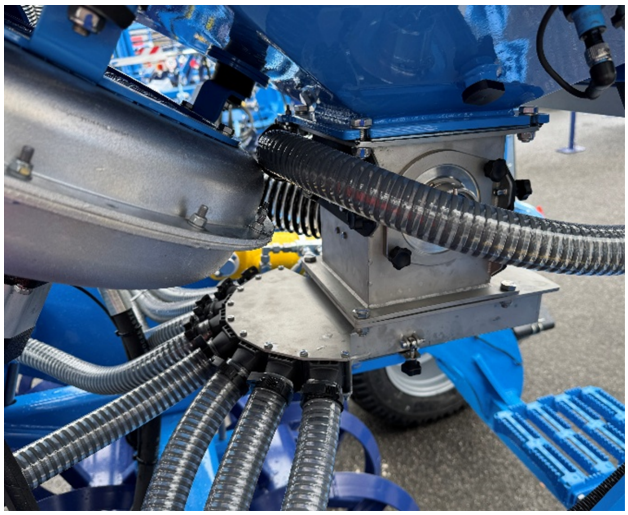




| | | | |
|---|---|---|---|
| 1 | Roller shaft | 6 | Roller bearing |
| 2 | Anti-rotation screw (locking screw) | 7 | Spacer washer 0,2 mm |
| 3 | Spacer washer with lock | 8 | Cover washer 1 mm |
| 4 | Spacer washer 0,1mm | 9 | Secure ring |
| 5 | Dosing disc | 10 | Hole for locking screw (dispenser selection) |

# 13 SEEDING RATE SETTING

## 13.1 Sowing test

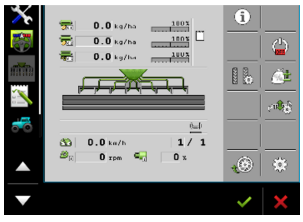


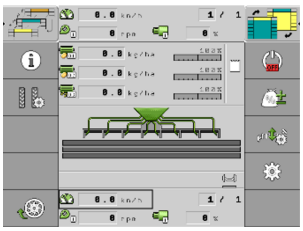


1. You will need the designated accessories to perform the calibration test.
   - Scale
   - Bucket
   - Sowing table
2. Select the correct roller for the roller metering unit based on the sowing table – Chapter 13.2
3. Check the cleanliness of the dispenser, roller and trowel condition.
   - **The trowel must reach on the roller – chapter 12**

Touch Basic

4. 
   - Turn on the application
5. 
   - Settings





6. Select the Product for which you want to calibrate.
   - Type of hose distribution EC setting up MOTOR 1

7. 
   - Calibration

8. **Mode – method of sowing test**

- Manually (while holding the calibration button, the roller rotates. To stop, it is necessary to press the button again. It is not necessary to hold the button pressed).
- Area
- Time(pre set roller rotation time)
- Revolutions

9. **Working speed – expected speed at working progress.**

Example: 10 km/h

10. Required value – sowing dose

11. **Calibration factor - from the table of calibration factors** – Chapter 13.2
**Example: 150 g/rev.**
Calibration factor – number of grams per revolution of the roller.
The calibration factor from the table is for guidance only. After the sowing test, the calibration factor is automatically recalculated.

12. Hang the calibration bucket.

13. Open the slider

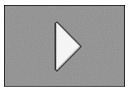
14. 

- Fill the roller.

15. Pay attention to the selected units on the scaling device.

16. Empty the bucket, then hang it on the scale and use the TARE function.

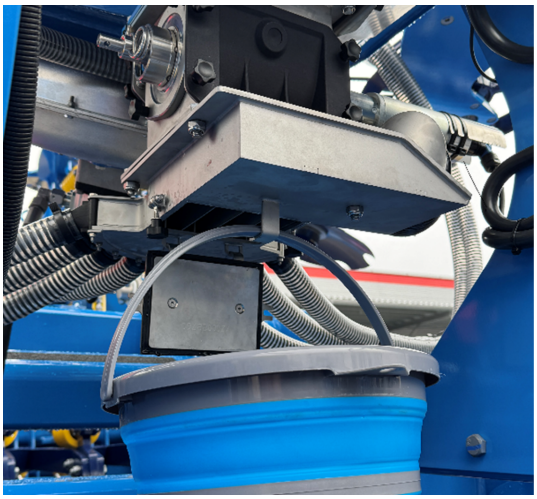
17. Hang the calibration bucket on the dispenser.

18. 

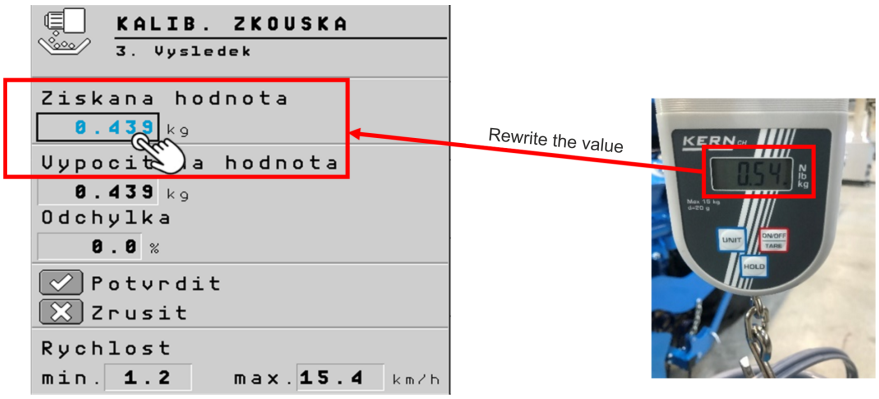
- Activate calibration button.

19. Hold down the calibration button. There must be a large amount of seed in the bucket for accurate calibration. To finish calibration, press the button again.
Example: Grasses 2 kg, Rape 0,5 kg

20. After releasing the calibration button, weight the amount of seed in the calibration bucket.



21. Enter the weight into the terminal. For this entry use a window with the name **Acquired value.**



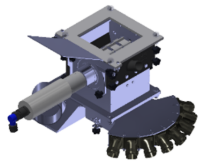

22. Check that you are comfortable with minimum and maximum **speed.**

- If it does **NOT COMPLY**, replace the roller and repeat the test.
- Minimum speed is too high= select a smaller roller (**ideal speed is from 1,5km/h**)
- Maximum speed is too low= select a larger roller.
- **Deviation** – For a roller dispenser should not be greater than 1 %, for auger metering unit 5 %.
- If the deviation is too large, confirm the calibration  and repeat it again from point 17.

23. If the range and deviation match, confirm  the calibration.

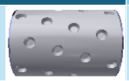
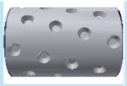
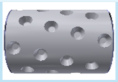
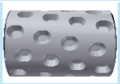
24. Repeat the same calibration procedure for the other dispenser. **Working speed range of electric motors is 15-100% (you will find this value on the work screen).**

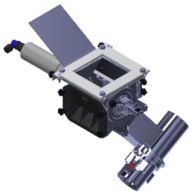
## 13.2 Sowing tables for FARMET dispenser



**V**Q**

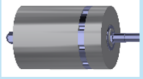
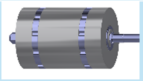
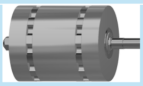
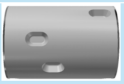
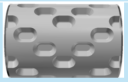
- **Developed specifically for the version without a chimney.**
- **Can also be used for a seeding device with a chimney.**

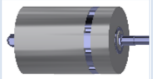
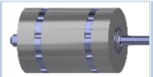
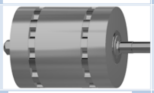
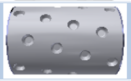
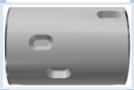
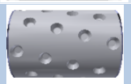
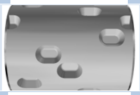
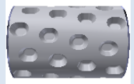
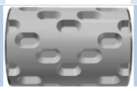
| ROLLERS | | | MACHINE SPAN | | 3 | 4 | 5 | 6 | 8. | 9 | 10 | 12 | CROP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V19Q | VZ000 25061 |  | 5–15 km/h | kg/ha min | 5.8 | 4.3 | 3.5 | 2.9 | 2.2 | 1.9 | 1.7 | 1.4 | Phacelia, grass, microgranulate |
| | | | | kg/ha max | 21 | 15.7 | 12.6 | 10.5 | 7.9 | 7 | 6.3 | 5.2 | |
| V30Q | VZ000 25029 |  | 5–15 km/h | kg/ha min | 9 | 6.7 | 5.4 | 4.5 | 3.4 | 3 | 2.7 | 2.2 | Phacelia, grass, microgranulate |
| | | | | kg/ha max | 47 | 35 | 28.2 | 23.5 | 17.6 | 15.7 | 14.1 | 11.7 | |
| V50Q | VZ000 25008 |  | 5–15 km/h | kg/ha min | 30 | 22.5 | 18 | 15 | 11.3 | 10 | 9 | 7.5 | Grass, microgranulate |
| | | | | kg/ha max | 70 | 52.5 | 42 | 35 | 26.3 | 23.3 | 21 | 17.5 | |
| V80Q | VZ000 24996 |  | 5–15 km/h | kg/ha min | 48 | 36 | 28.8 | 24 | 18 | 16 | 14.4 | 12 | Grass, microgranulate |
| | | | | kg/ha max | 112 | 84 | 67.2 | 56 | 42 | 37.3 | 33.6 | 28 | |



**V****

- The roller can only be used for a seeding device with a chimney.
- Cannot be used in the V**Q version.

| ROLLERS | | | MACHINE SPAN | | 3 | 4 | 5 | 6 | 8. | 9 | 10 | 12 | CROP |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| V3,5 H | VZ000 13264 |  | 5–15 km/h | kg/ha min | 1 | 0.8 | 0.7 | 0.6 | 0.4 | 0.4 | 0.3 | 0.2 | Rapeseed, mustard, grass etc. |
| | | | | kg/ha max | 3.6 | 2.7 | 2.2 | 1.8 | 1.4 | 1.2 | 1.1 | 0.9 | |
| V7 | VZ000 60373 |  | 5–15 km/h | kg/ha min | 2 | 1.5 | 1.2 | 1 | 0.8 | 0.7 | 0.6 | 0.5 | Rapeseed, mustard, grass etc. |
| | | | | kg/ha max | 7.2 | 5.4 | 4.3 | 3.6 | 2.7 | 2.4 | 2.2 | 1.8 | |
| V18 | VZ000 16523 |  | 5–15 km/h | kg/ha min | 5.5 | 4.1 | 3.3 | 2.75 | 2 | 1.8 | 1.6 | 1.4 | Mustard, grass |
| | | | | kg/ha max | 18 | 13.5 | 10.8 | 9 | 6.7 | 6 | 5.4 | 4.5 | |
| V20 | VZ000 15596 |  | 5–15 km/h | kg/ha min | 6 | 4.5 | 3.6 | 3 | 2.2 | 2 | 1.8 | 1.5 | Grass, microgranulate |
| | | | | kg/ha max | 34 | 25.5 | 20.4 | 17 | 12.8 | 11.3 | 10.2 | 8.5 | |
| V40 | VZ000 15460 |  | 5–15 km/h | kg/ha min | 11 | 8. | 6.6 | 5.5 | 4.1 | 3.7 | 3.3 | 2.7 | Grass, microgranulate |
| | | | | kg/ha max | 60 | 45 | 36 | 30 | 22.5 | 20 | 18 | 15 | |
| V100 | VZ000 12852 |  | 5–15 km/h | kg/ha min | 60 | 45 | 36 | 30 | 22.5 | 20 | 18 | 15 | Grass, microgranulate |
| | | | | kg/ha max | 140 | 105 | 84 | 70 | 52.5 | 46.5 | 42 | 35 | |

| FARMET DOSING ROLLER CALIBRATION FACTOR TABLE | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|
| VARIETY | | | MUSTARD | RAPE | POPPY | ALFALFA | GRASSES | PHACELIA | MICROGRANULATE |
| ROLLER | | cm3/RPM | g/cm³ | | | | | | |
| | | | 0,6 | 0,65 | 0,4 | 0,8 | 0,36 | 0,22 | 0,7 |
| V3,5 |  | 3,5 | 2 | 2,7 | 1 | 3 | 1 | 1 | / |
| V7 |  | 7 | 4 | 5,4 | 3 | 6 | 3 | 2 | / |
| V18 |  | 18 | 10 | / | / | / | 8 | 5 | / |
| V19Q |  | 19 | / | / | / | / | 9 | 6 | 13 |
| V20 |  | 20 | / | / | / | / | 10 | / | 14 |
| V30Q |  | 30 | / | / | / | / | 14 | 10 | 21 |
| V40 |  | 40 | / | / | / | / | / | / | 28 |
| V50Q |  | 50 | / | / | / | / | / | / | 35 |
| V80Q |  | 80 | / | / | / | / | / | / | 56 |
| V100 |  | 100 | / | / | / | / | / | / | 70 |

**NOTE: The calibration factors in this table are for guidance only. After the calibration test, the calibration factor is automatically recalculated.**

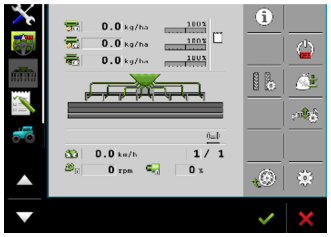
# 14 ADJUSTIN THE DOSE DURING WORK

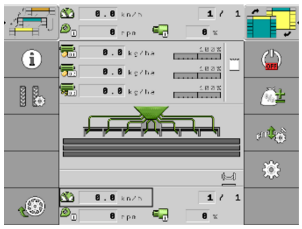
This function is used to adjust the target dose (100%) to a dose in the range of +/-100%, if the engine allows to use in this range.

Touch Basic

1. 

- Turn on the application





| Function icon | Meaning |
|---|---|
|  | Increase the target dose.<br>The target value is increased by a defined value in the product database. |
|  | Reduces the target dose. |
|  | Restores the target dose to 100%. |

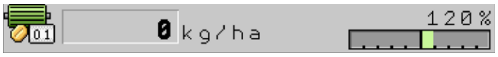
2. 
- Dose adjustment.

3. 

,

or

4. On the work screen, the change is shown as follows



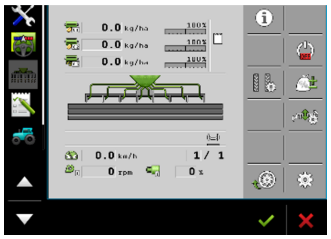

- The control unit recalculates the target dose.
- After one minute of working with the changed target dose, the change indicator starts flashing.

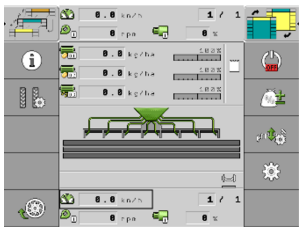
# 15 EMPTYING THE HOPPER USING ELECTRONICS

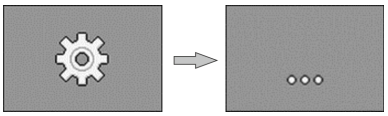
- The system allows the hopper to be emptied using electric or hydraulic motors and calculates the residual quantity.

Touch Basic

1. 
   - Turn on the application





2. 

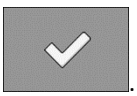
3. It is necessary to have a selected container that we want to empty.
   - **Hopper**
   - 1 / 2 / 3 


4. 

5. Confirm **Dispenser**.

6. 

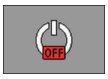
7. The calibration buttons are currently used to empty the hopper. When using the emptying function with a hydraulic motor, it is necessary to have an activated circuit for the hydraulic motor.

8. When the hopper is empty, press the button  .

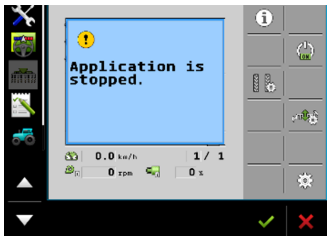
# 16 WORKING POSITION SOURCE

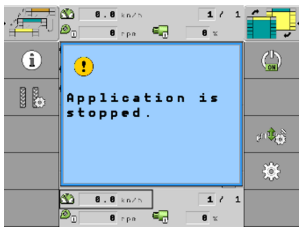
• To switch the sowing on and off, the machine must have information on the working position. In the system it is possible to set which source of working position the system of the machine will use.

Touch Basic

1. 


• Switch off application




2. 

• Settings.

3. 

• Go to the next page

4. 

• Go to the next page

5. **Working position**

• **Working position sensor 1** – The source is the machines antenna sensor (default setting)

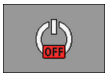
• Tractor – The source is the working position from the sensor (CAN) of the tractor, eg tractor arms, GPS.

• No / Always in working position – the machine is constantly in the working position (deepen).

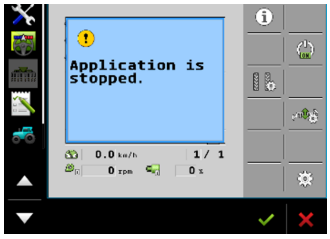
6. After selecting your selected source, use  to return to the work screen.

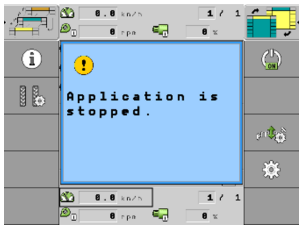
# 17 SOURCE SPEED MACHINERY

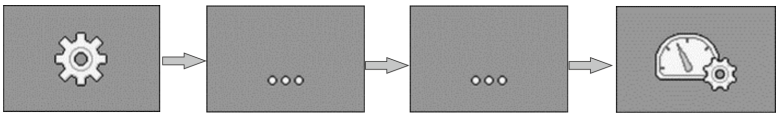
Touch Basic

1. 

- Turn off the application

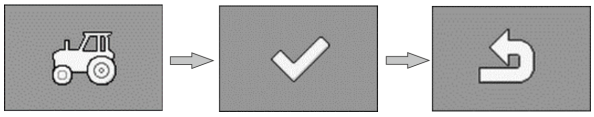


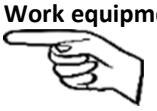

2. 

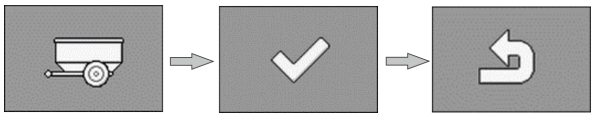
**There are 3 options of the travel speed source:**

1) **Tractor** – The source of speed is the tractor. The machine must be connected to the ISOBUS or CAN of the tractor.



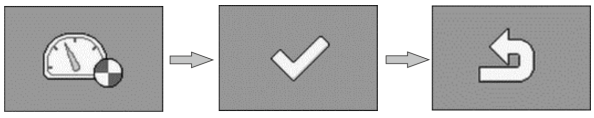
2) **Work equipment** – The source of speed is radar or speed GPS directly on the machine





If the machine is equipped with **radar** set the number of pulses to - 13 500 to 100 meters.
If the machine is equipped with **GPS** (speed), set the number of pulses to - 13 000 to 100 meters.

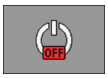
3) **Simulation** – this setting is used to simulate a constant speed (use for service purposes).

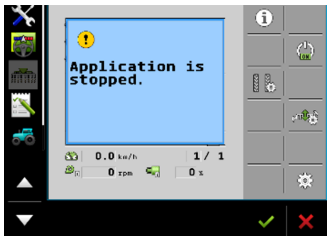


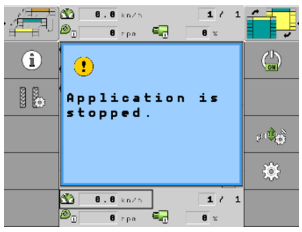
# 18 MACHINE GEOMETRY

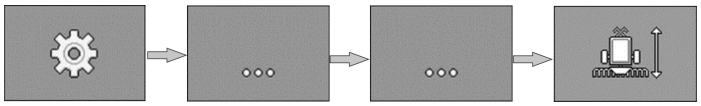
- This setting is used to define the geometry of the machine relative to the tractor. It is also possible to set the advance and delay of the engine start (sowing).

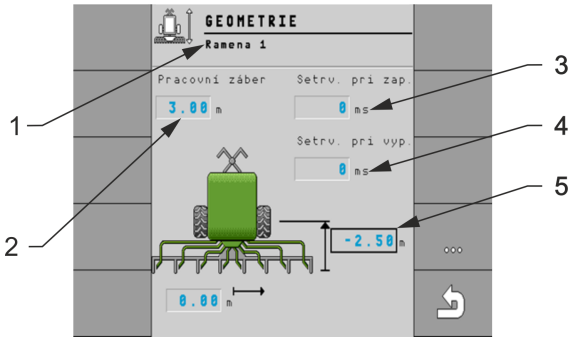
Touch Basic

1.  • Turn off the application

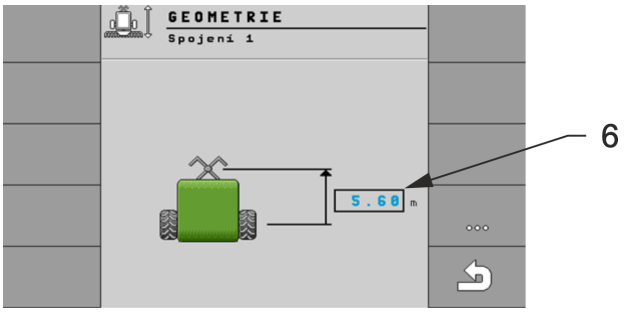


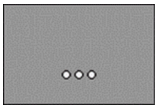




2. 

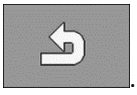



**Note on the point 5:** If the section is behind the axle axis, the value must always be negative (sowing section), if the section is in front of the axle, the value must be positive (fertilization section).




The button is used to move to the setting of arm 2,3 and connection 1 

| | | | |
|---|---|---|---|
| 1 | Setting of the hopper 1 (motor 1) | 4 | Advance engine shutdown 1 |
| 2 | Working width of the hopper 1 (motor 1) | 5 | Distance from the axle axis to the seed outlet |
| 3 | Engine start time 1 | 6 | Distance from the drawbar pin to the axle axis |

Use the back button to return from the geometry settings  .

# 19 ERROR MESSAGES

## 19.1 ISO messages

| ID | Alarm text | Possible cause | Possible remedy |
|---|---|---|---|
| 001 | The system has been stopped. A restart is required. | The connection to the SLAVE slave control unit has been interrupted. Download manager has been activated | Disconnect and connect the control unit (disconnect the ISO connector). |
| 002 | The configuration has changed. The job computer restarts. | The configuration has changed. | Wait until the control unit restarts. |
| 003 | Input too high. | The value entered is too high. | Enter a lower value. |
| 004 | Input too low. | The value entered is too low. | Enter a higher value. |
| 005 | Error reading or writing data in flash memory of EEPROM.. | An error occurred while starting the job computer. | Disconnect and connect the control unit (disconnect the ISO connector). |
| 006 | Data was successfully downloaded. | | |
| 007 | A configuration error has been detected. | The configuration is incorrect. | Check the configuration. |
| 008 | The procedure is not permitted as long as the job is activated in the ISOBUS-TC application. | The job is activated in the ISOBUS-TC application. | Deactivate the order. |
| 009 | Speed signal lost from CAN bus. | The cable connection has been disconnected. | Check the cable connection. |
| 010 | Error initializing Control-Layer. | The control-layer was incorrectly configured. | Check the configuration. |
| 011 | Multiple terminals have the same number. | There are several terminals with the same number (function instance) on ISOBUS. | Change the number (function instance) in the terminal. |
| 012 | Multiple TASK controllers have the same number. | There are several TASK controllers with the same number on ISOBUS. | Change the number. |
| 013 | The list of orders is full. | Too many orders are available in the order list. | Delete unnecessary orders. |
| 014 | Internal order recording stopped due to product change. | The product was changed during the recording of the internal order. | Select the original product. |
| 015 | The order failed to run because another product was assigned. | A different product that the one assigned to the tank in the configuration is stored in the order. | Check which product is correct and correct the order or assignment to hopper. |

| ID | Alarm text | Possible cause | Possible remedy |
|---|---|---|---|
| 043 | Dataset already exists. | An identical dataset already exists. | Check the dataset or change the name. |
| 044 | The dataset is defective. | There is an error in the dataset. | Check the dataset. Reinstall the software. |
| 045 | Dataset no found. | The selected dataset was not found. No calibration test has yet been performed for the selected product.. | Choose another dataset or perform a calibration test for the selected product. |
| 046 | Loop overflow. | There is a conflict between the database and the machine. | You need to free up disc space on the terminal. |
| 047 | Database is full. | Database is full. | First, delete the dataset to save the new one. |
| 060 | The entry cannot be accepted. The value has been corrected. | The width of the arms is not divisible by the assigned sections. | Check the width of the arms and the number of sections. |

## 19.2 Regulations alarms

| ID | Alarm text | Possible cause | Possible remedy |
|---|---|---|---|
| 400 | The configured required blower speed is invalid. Product: xxxx. | The set required speed is outside the specified fan drive limits for the respective product. | Change the minimum and maximum limits of the required product speed. |
| 401 | The blower rotates too slowly. | The current fan speed is lower than the minimum allowed. | Increase fan speed. |

| ID | Alarm text | Possible cause | Possible remedy |
|---|---|---|---|
| 402 | The blower rotates too fast. | The current fan speed is higher than the value entered in the parameter „Blower speed tolerance“. | Reduce the fan speed or change the tolerance limit. |
| 403 | Pressure too high. | The pressure of the linear encoder is higher than the value of the “Maximum value” parameter. | Reduce the pressure or change the parameter “Maximum value“. |
| 404 | Pressure too low. | The pressure of the linear encoder is lower than the value of the “Minimum value” parameter. | Increase pressure or change parameter “Minimum value“. |
| 405 | Dosing has been stopped since the working position has not been reached. Excavate the sowing section. | The machine is not in the working position. | Excavate the sowing section. |
| 406 | Dosing was stopped because the machine was not completely raised. Excavate the sowing section. | The machine was not fully raised. | Excavate the sowing section. |
| 407 | The dispenser drive is stopped. | The current speed of the dosing drive is lower than the minimum speed. | Stop now! Eliminate the cause. |

| | | | |
|---|---|---|---|
| 408 | The metering shaft is stationary. | Speed sensor on the dosing shaft does not register any movement of the dosing shaft. | Stop now! Eliminate the cause. |
| 410 | The dispenser drive is outside the control area. | The current dosing drive speed is higher or lower than set speed. | Drive slower/faster or use a larger/smaller metering unit. |
| 411 | The dosing drive cannot comply with the setpoint. | You are driving too fast or too slow. It is not possible to reach the required value at the current speed. | Drive slower or faster so she can control unit to regulate the sowing rate. |
| 412 | The application has stopped due to a fatal error. | An error has occurred. This error always occurs in combination with another error. | Please fix the related error. |
| 413 | The application was stopped due to high driving speed. | Driving speed is too high. | Reduce the speed. |
| 414 | Dosing was stopped because the machine was not completely raised. Excavate the sowing section. | The machine was not fully raised. | Excavate the sowing section. |
| 415 | The blower rotates too fast. Dosing was stopped. | AThe current fan speed is higher than the value of the parameter “Max. rpm.“. | Reduce the fan speed or change the blower parameter “Max rpm“. |

| ID | Alarm text | Possible cause | Possible remedy |
|---|---|---|---|
| 416 | The blower rotates too slowly. Dosing was stopped. | The current fan speed is lower than the value of the parameter “Min. rpm“. | Increase the fan speed or change the blower parameter “Min. rpm“. |
| 417 | The calibration flap is open. Please close it. | The calibration flap is open, although it is currently being sown. | Close the calibration flap. |
| 418 | The calibration flap is closed. Please open it. | The calibration flap is closed, although a calibration test is currently being performed. | Open the calibration flap. |

## 19.3 Machine-specific alarms

| ID | Alarm text | Possible cause | Possible remedy |
|---|---|---|---|
| 602 | Connection lost. | The connection to the ERC module has been lost. | Check the cables. |
| 603 | Connection disrupted. | The connection to the ERC module is interrupted. | Check the cables. |
| 604 | Supply voltage too low. | The supply voltage of the ERC modules is too low. | Check the supply voltage and check the vehicle battery. |
| 605 | Short circuit. | There is a short circuit in the ERC modules. | Check the cables. |
| 606 | Open load current circuit. | An open load circuit has been detected for the ERC modules. | Check the cables and make sure the disconnect connector is available. |
| 607 | Recognizes. ERC module error. | The configuration is incorrect. | Check the IN and OUT configuration. |

| | | | |
|---|---|---|---|
| 608 | Seed flow was not recognized. | The seed flow system did not detect any seed flow. | Check the seed flow system. |
| 609 | Seed flow was detected. | Seed flow occurred in the tramline. | Check the tramline switching. Kalpak tightness check. |
| 611 | Low tank level. | There is little seed of fertilizer in the hopper. | Fill the hopper. |
| 612 | The tank is empty. | There is no seed or fertilizer in the hopper. | Fill the hopper. |
| 613 | Exceeding the time when closing the section. | It takes too long to close the left section. | Make sure something is blocked. |
| 617 | Defective charger. | The charger alternator is defective. | Check the charger alternator. |
| 618 | No product flow was detected in the active row. | No product flow was detected in the active row. | Check the product flow, or some supply lines are blocked. |
| 619 | Too high flow detected in the active row. | Product flow detected too high was detected in the active row. | Check the calibration. |
| 620 | Product flow too low in the active row detected. | Too little product flow was detected in the active row. | Check the calibration. |

| ID | Alarm text | Possible cause | Possible remedy |
|---|---|---|---|
| 621 | Not available for this product no dataset. | A calibration test has not yet been performed for the product in question. | Perform a calibration test before working with the product. |
| 622 | The sowing test button is activated. | The sowing test button was activated before opening the calibration screen. | Release the sowing test button. |
| 630 | Connection lost. | The connection to the MRC module has been lost. | Check the cables. |
| 631 | Undefined module index. | A software error has occurred. | Contact customer service. |
| 636 | There is no seed for overdosing. | Too little seed was detected during pre-dosing. | Make sure that sufficient seed is available. |
| 638 | The engine stopped. | The MRC engine stopped. | Check the cables. |
| 639 | Current too high. | The MRC motor requires too much current. | Make sure something is blocked. |
| 640 | No speed was reached. | The MRC module did not reach the required speed. | Check the cables. Check the seed drills. |
| 641 | Power voltage too low. | The power voltage of the MRC module is too low. | Check the cables. |
| 642 | Electronics voltage too low. | The electronics voltage at the MRC module is too low. | Check the cables. |
| 643 | Sensor voltage too low. | The sensor voltage at the MRC module is too low. | Check the cables. |
| 650 | Connection lost. | The connection to the AIRidium® sensor has been disconnected. | Check the cables. |
| 651 | Undefined module index. | An error occurred of the AIRidium® module. | Contact customer service. |
| 660 | Connection lost. | The connection to the CAN Repeater has been disconnected. | Check the cables. |

| | | | |
|---|---|---|---|
| 663 | Drop below minimum voltage. | The voltage is lower than the pre-set minimum supply voltage. | Check wiring and supply voltage. |
| 664 | Sensor error detected PLANTirium®. Pollution rate too high. | The sensor is dirty. Sensitivity does not match the selected product. | Clean the sensor and/or change the sensitivity in the product. |
| 665 | An error has been detected in the PLANTirium® sensor. Faulty sensor transmitter. | The sensor transmitter is defective. | Check the cables on the sensor. |
| 666 | An error has been detected in the PLANTirium® sensor. Not achieved. | The minimum supply voltage has not been reached. | Check the cables. |

| ID | Alarm text | Possible cause | Possible remedy |
|---|---|---|---|
| 667 | Sensor error detected PLANTirium®. LIN-BUS communication error. | AQ LIN-Bus communication error has occurred. The sensor did not receive any messages from the LIN-Bus. | Check the cables. |
| 668 | Working speed is out of speed range. | Working speed is too high or too low. | Make sure you are within the speed range you found during the calibration test. |
| 669 | An error has been detected in the PLANTirium® sensor. Connection lost. | The connection to the PLANTirium® sensor has been disconnected. | Check the cables on the sensor. |
| 670 | Seed flow system error. Error: Sensor: | An error has occurred in the seed flow system. | Check the seed flow system. |
| 671 | Seed flow system error. | An error occurred in the seed flow system. | Check the seed flow system. |
| 672 | Product flow detected in inactive row. | Product flow detected in inactive row. | Check disconnection. |
| 680 | Connection lost. | The connection to the monitoring/control module has been disconnected. | Check cables. |
| 681 | Undefined module index. | An unconfigured monitoring/control module was found. | Check the number of configured or connected modules. |
| 686 | Supply voltage too low. | The supply voltage at the monitoring/control module is too low. | Check the cables. |
| 688 | The target value cannot be met. Seed coulter pressure. | The required setpoint for the linear actuator has not been reached. | Check the linear actuator for blockage. |
| 689 | The target value cannot be met. Working depth. | The required setpoint for the linear actuator has not been reached. | Check the linear actuator for blockage. |
| 690 | An error has been detected in the CAN repeater. 5V – Wrong voltage. | The CAN repeater is defective. | Contact the customer service. |
| 691 | An error has been detected in the CAN repeater. 3.3 V – Wrong voltage. | The CAN-Defeater is defective. | Contact the customer service. |

| | | | |
|---|---|---|---|
| 692 | An error has been detected in the CAN repeater. 2.5 V – Wrong voltage. | The CAN-Defeater is defective. | Contact the customer service. |
| 693 | Error detected in CAN-Repeater 12 VE- Faulty voltage. | The power supply to the electronics is defective. | Check the cables. |

| ID | Alarm text | Possible cause | Possible remedy |
|---|---|---|---|
| 694 | An error has been detected in the CAN repeater. 12 V – Faulty voltage. | The power supply voltage is defective. | Check the cables. |
| 695 | An error has been detected in the CAN repeater. Error converting AD. | The CAN-Repeater is defective. | Contact the customer service. |
| 696 | An error has been detected in the CAN repeater. Error entering address. | An error was detected during the addressing process. | Check the cables. |
| 697 | An error has been detected in the CAN repeater. Error in parameter block. | The CAN-Repeater is defective. | Contact customer service. |
| 698 | Transmission of the log file has started. Message, when finished. | | |
| 699 | Transmission of the log file completed. | | |

# 20 MACHINE MAINTENANCE AND REPAIRS

- Repairs to the machine may only be carried out by a trained person. When leaving the tractor cab, the operator must switch off all hydraulic circuits, appliances on the machine (fan) and the engine, the operator must prevent unauthorized access to the tractor.
- If it is necessary to weld during repairs and have the machine connected to the tractor, the supply cables must be disconnected from the alternator and battery.
- Check the tightening of all screw and other mounting connections on the machine before each using of the machine.
- Adjustment, cleaning and lubrication of the machine may only be performed when the machine is at standstill (means the machine is stationary and not running).
- When adjusting, cleaning, maintaining and repairing the machine, you must secure those parts of the machine that could endanger the operator by falling or other movement.
- Repairs to the hydraulic circuits may only be carried out disassembled and the machine must be laid on the ground by the working units.
- When repairing the hydraulic circuits of the machine, it is first necessary to depressurize the hydraulic circuits of the machine.
- Use only the areas marked with self-adhesive labels with a chain symbol to catch the machine when handling with a lifting device „ ⛓ “.
- In the event of a fault or damage to the machine, switch off the tractor engine immediately and secure the engine against restarting, secure the machine against movement – only then you can remove the fault.
- Only use original spare parts, suitable tools and protective equipment when repairing the machine.
- Keep the machine clean.

- **Do not clean hydraulic cylinders (piston rods), bearing and electronic parts with a high-pressure cleaner or a direct stream of water. Seals and bearing are not waterproof at high pressure.**

## 20.1 Maintenance plan

| Maintenance plan | | | | | |
|---|---|---|---|---|---|
| Maintenance operation | Daily (season) | 40 h | Before the season | After the season | Time interval |
| Generally a machine | | | | | |
| • Visual inspection of the machine<br>• Monitoring of unwanted sounds, vibrations and excessive wear. | X | | | | |
| • Cleaning the machine<br>• Storage of the machine ideally under the roof | | X | | X | |
| • Complex visitation | X | | | X | |
|  | Do not clean hydraulic cylinders, bearings, electrical and electronic parts with a high-pressure cleaner or a direct stream of water. Seals and bearings are not waterproof at high pressure. | | | | |
| Hydraulic system | | | | | |
| Check the function, tightness, fastening and abrasions of all hydraulic components and hoses | | X | X | | |
| **Hydraulic hoses – replacement:**<br>• Damage hose outer casing (mechanically or swollen)<br>• Fluid leakage (especially at the tip)<br>• Bumps or blisters on the hose<br>• Deformed or corroded terminal<br>• Loose end – the hose rotates | X | | | X | |
| **Hydraulic hose– replacement:**<br>• Hose life exceeded<br>  | | | | | 6 years |
| **!!! PREVENTION means to eliminate the problem planned, out of season without stress and comfortable before a secondary problem, accident or health threat arises.** | | | | | |

| Maintenance plan | | | | | |
|---|---|---|---|---|---|
| Maintenance operation | Daily (season) | 40 h | Before the season | After the season | Time interval |
| Pneumatic system | | | | | |
| Fan:<br>Speed setting function | X | | X | | |
| Fan impeller<br>Condition check and fastening, dirt removal<br>Check the fan drive mounting | | X | | | |
| Fan, seeding hose, mixer:<br>Tightness, clamping points, clogging, general condition | X | | | X | |
| Hydraulic couplings and hoses:<br>Tightness of all components and permeability | X | | | | |
| **Sowing device (dispenser)** | | | | | |
| Checking the overall condition, adjustment, wear, tightness | | | X | | |
| Checking for the presence of foreign bodies | X | | | | |
| Check the condition of the drive, motor bearings | | X | | | |
| Check the tightness of the plate on the roller | | | X | | |

**!!! PREVENTION means to eliminate the problem planned, out of season without stress and comfortably before a secondary problem, accident or health threat arises.**

| Maintenance plan | | | | | |
|---|---|---|---|---|---|
| Maintenance operation | Daily (season) | 40 h | Before the season | After the season | Time interval |
| **Damage check, possible replacement** | | X | X | | |
| **Safety device** | | | | | |
| Lighting and safety hatched boards – check condition, functionality and cleanliness | X | | X | | |
| Warning and safety labels – presence and legibility check | | X | | | |
| **After season** | | | | | |
| The whole machine<br>Perform treatment and cleansing; do not spray plastic parts with oil or similar means<br>Spray the piston rods of the hydraulic cylinders with suitable anti-corrosion agents<br>Check the strength of all screw and plug-in connections (see table of tightening torques)<br>Check electrical wiring for damage and replace if necessary | | | | | |

**!!! PREVENTION means to eliminate the problem planned, out of season without stress and comfortably before a secondary problem, accident or health threat arises.**

### 20.1.1 Lubricant nadling

- Treat lubricants and oils as hazardous waste in accordance with applicable laws and regulations.
- Protect yourself from direct contact with oils and lubricants by using gloves or protective creams.
- Wash oil marks on the skin thoroughly with warm water and soap. Do not clean the skin with petrol, diesel or other solvents.
- Oil or grease is toxic. If you have swallowed oil or grease, see a doctor immediately.
- Protect children from contact with lubricants and oils.

# 21 SHUTTING DOWN THE MACHINE

**Shutting down the machine for a longer period of time**:

- Park the machine under a roof if possible.
- Park the machine on a level and firm surface with sufficient capacity.
- Before storing the machine, remove dirt and preserve it so that the machine does not suffer any damage during storage. Pay special attention to all marked lubrication points and lubricate them properly according to the lubrication schedule.
- Park the machine in the transport position with the frames folded down. Park the machine on the axle and parking leg, secure the machine against unintentional movement with wheel chocks or other suitable aids.
- Secure the machine against unauthorized access.

# 22 ENVIRONMENTAL PROTECTION

- Regularly check the hydraulic system for leaks.
- Preventive replacement or repair of hydraulic hoses or other parts of the hydraulic system showing signs of damage before an oil leak occurs.
- Check the condition of the hydraulic hoses and replace them in good time. The service life of hydraulic hoses also includes the time for which they were stored.
- Dispose of oils and fats in accordance with applicable waste laws and regulations.

# 23 END OF LIFE MACHINE DISPOSAL

- When disposing of the machine, the operator must ensure that steel parts and parts in which hydraulic oil or grease moves are distinguished.
- The operator must cut the steel parts in accordance with the safety regulations and hand them in at a collection point for secondary raw materials. They must proceed with other parts in accordance with the applicable waste laws.

# 24 SERVICE AND WARRANTY CONDITIONS

## 24.1 Service favor

Service is provided by a sales representative, after consultation with the manufacturer or the manufacturer directly. NSpare parts through the sales network by individual dealers throughout the country. Use spare parts only in accordance with the spare parts catalog officially issued by the manufacturer.

## 24.2 Guarantee


**1.** The manufacturer provides a basic warranty for the product for a period of 12 months. In the case of immediate registration of the sale to the end customer, including their valid contact details, the end customer receives an extended warranty of 36 months. The warranty is provided from the date the product is handed over to the end user (buyer). The registration must be completed by the seller (sales representative) on the My Farmet online portal. Upon correct registration, the end user will gain access to the My Farmet portal and all the benefits of the extended warranty.

**2.** The warranty covers hidden defects that manifest during the warranty period under proper use of the machine and in compliance with the conditions specified in the Operating Manual.

**3.** The warranty does not cover consumable spare parts, i.e., normal mechanical wear and tear of replaceable working parts (shares, discs, harrow tines, roller bearings, etc.).

**4.** The warranty is tied to the machine and does not terminate with a change of ownership. The extended warranty is conditional upon registering the new owner's contact details in the My Farmet portal.

**5.** The warranty is limited to disassembly and assembly, replacement, or repair of the defective part. The decision on whether the defective part will be replaced or repaired lies with the manufacturer, Farmet.

**6.** During the warranty period, repairs or other interventions on the machine may only be carried out by an authorized service technician of the manufacturer. Otherwise, the warranty will not be recognized. This provision does not apply to the replacement of consumable spare parts (see point 3).

**7.** The warranty is conditional upon the use of original spare parts supplied by the manufacturer.