User Manual of Disc Spreader

SLD-18

SAMI

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INTRODUCTION

AS SAMI thanks You for Your purchase of this device. We hope that You will be pleased with our product. AS SAMI has a long experience of designing and manufacturing various working devices.

Read this user manual carefully and follow it. This ensures the user's safety, problem-free functioning and a long useful life for the device. If the device is loaned or rented to a third party, the person who loans/rents the device shall also read the manual.

Only original spare parts may be used, this ensures a long and safe useful life for the device.

If You need advice about the maintenance, spare parts or use of the product, please contact the seller.

This manual is intended for a competent user and does not describe any general principles of road maintenance work and working with a tractor. The user of the device must be familiar with road maintenance work.

Read the manual carefully prior to commissioning the device! Always keep the manual near the device!

It is important to ensure that the user has understood all parts of the manual and complies to the requirements prescribed in the manual.

The manufacturer reserves the right to modify the design of the device for product development and improvement.

CONTACT INFORMATION

In order to receive quick and accurate help in ordering spare parts and in case of any defect, You should indicate the data on the device (serial number, model) to the seller.

Note the data on the factory label on the manual in order to always have them readily available.

Model: SLD-18

Serial number: ……

Seller of the device**:** ……..

Address: ……..

Phone: ……..

PURPOSE AND FUNCTIONING PRINCIPLE

The spinner spreader is intended for sanding roads and parking spaces with granite grit and salt. The spreader has a GPS device for automated adjustment of the spreading amount depending on the driving speed of the tractor in order to achieve an even spreading amount. The GPS device also allows automatic starting and stopping of the spreading depending on the driving speed of the tractor. The spinner spreader may only be used for the purpose indicated in the manual.

The spinner spreader is to be connected to the rear hitch (3P Cat. 2) or the front loader hitch of a tractor. In order to drive the device, the hydraulic system is connected using quick couplings and the electrical system is connected using connectors. The function of the device is only controlled from the tractor cabin. The spreading of the material is achieved by the cooperation of the rotating auger and the rotating spinner.

TECHNICAL SPECIFICATIONS

Table 1. Technical specifications of the spinner spreader

Working width	1 – 10 m
Length x width x height (in the transport position)	1267 x 2506 x 1241 mm
Weight	approx. 650 kg
Volume	1800 l
Recommended tractor power	From 100 hp
Recommended tractor weight	From 4 t
Maximum oil pressure	200 bar
Maximum flow	60 l/min
Couplings	EURO / SBM / 3P
½'' quick couplings	2 pcs

The noise level of the device has not been measured. The equivalent sound pressure level of the tractor exceeds that of the device.

SAFETY INSTRUCTIONS

- Observe all relevant safety and health regulations and the general legislation when using the device. In addition, safety instructions for different working areas and regulations based on the traffic legislation must be observed.
- Read the manual carefully prior to commissioning the device.
- Read the tractor manual carefully prior to commissioning the device.
- Make yourself thoroughly familiar with the device prior to commissioning the device.
- The user shall be healthy and must not be under influence of alcohol or drugs. Observe the requirements concerning the user of the driving machine for the device.

- Children or unhealthy persons may never work with the device.
- The device is intended for one user. The user shall ensure that there are no other individuals or objects in the vicinity of the device while working with the device. The spinner throws off spreading material (also larger stones that may occur in it) to the distance of 10 meters or even more. This poses a risk to health and property.
- The user shall remain in the tractor cabin while working with the device.
- The working area shall be sufficiently illuminated.
- Ensure that the spinner spreader is correctly coupled to the tractor.
- The ends of the quick couplings of the hydraulic system shall always be cleaned prior to connecting them, this prevents dust from entering the hydraulic system and the hydraulic motors.
- Ensure that the hydraulic hoses are connected correctly and that no leaks occur.
- Use protective gloves while handling hydraulic hoses.
- The hydraulic system has been pressure tested at the factory. When the hydraulic system is used for the first time, maneuver the system smoothly and ensure that no leaks occur in the system.
- Ensure that the power cables are correctly connected and undamaged.
- Never touch any connector or loose cable while the connectors in the tractor are connected. If anything is loose or needs repairing, always disconnect all connectors from the tractor.
- Ensure that the hydraulic hoses and power cables do not become stretched too much or tangled in any position of the device while the spinner spreader is moved from the work position to the loading position,.
- Never adjust pressurised hydraulic couplings. Hydraulic oil under high pressure penetrates the skin and may cause serious injury.
- Always start working slowly and cautiously. Test all allowed positions and ensure that the tractor is stable. Use additional weights in front of/behind the tractor if necessary.
- Ensure that all functions of the device work properly. Any discovered malfunction shall be corrected immediately.
- Never walk in under the device. Even while the engine is switched off, the spinner spreader may still sink down if the control lever is moved.
- The spinner spreader has no specific emergency stop mechanism. The device stops when the hydraulics is switched off.
- Always stop the device when you leave the tractor cabin.
- While the device is transported coupled to a tractor, always choose a low driving speed on an uneven road in order to prevent overloading the joints due to excessive swaying and to avoid losing control of the tractor.
- When the device is uncoupled from the tractor hitch, always use the support legs on the device in order to prevent the spreader from overturning.

ASSEMBLING THE SPINNER SPREADER AFTER TRANSPORT

Depending on how the spreader is delivered and how it will be used, the spreader may need some minimum assembling.

- Ensure that the spinner spreader has not been damaged during transport.

- In order to safely remove the spreader from the transport package, start by removing the sides and the top of the package. Mount a suitable coupling frame onto the spinner spreader. Lift up the spreader from the package as straightly as possible until the package supports no longer are in contact with the device. Push away the bottom of the package under the device and place the device down. Now You can turn the device upright or couple it to a tractor.

- We have removed the spreader side lights for transport in order to reduce the package size.

- Mount the side lights depending on whether the device will be used on the front or rear hitch, so that the white side of the lights is visible from in front of the tractor and the red side is visible from behind the tractor. The colours for the sides of the side lights are marked as follows: R02 – red, A02 - white.

- If the spinner spreader is used in the front hitch, turn the reflectors the other way so that the white reflector remains visible. The reflectors are mounted with the red side visible at the factory.

- The control panel is packaged inside the spinner spreader, fixed onto the nets. Install the control panel in a properly visible and convenient position in the tractor cabin.

WORKING WITH THE SPINNER SPREADER

While working with the spinner spreader, ensure that the spreading material does not cause any risk to any living being or property. Spreading material and any larger stones or clumps in it may be thrown off to a distance of 10 meters or even more.

- Always drive at a suitable speed depending on the weather conditions when working with the spinner spreader, roads may be dangerous and slippery.

- In order to fill the spinner spreader, tilt the spreader to the horizontal position (with the spreader wall level with the ground) and push the spreader smoothly into a pile of spreading material, simultaneously lifting the spreader. Then drive away from the pile and tilt the spreader to the vertical position again. Never use excessive force to push the spinner spreader into the pile, this may deform the hydraulic puller. Never push the spreader into the pile in a vertical position or at a too large angle, this may damage the spinner.

- Starting the daily work with the spinner spreader only requires switching on the hydraulics and the control panel, selecting the correct material and activating the spreading mode. The spreading amount and width are adjusted with two knobs during the work.

- Always start working with the spinner spreader slowly and cautiously. Always start the spreading with a smaller spreading width and amount.

- Check the material level once in a while during the work with the spreader.

- NOTE! When spreading salt, never use the maximum spreading amount while the driving speed is low and the spreader's spreading width is small. The spinner spreader cannot spread the salt while the spinner rotates slowly and the auger rotates fast. This may cause the salt to clump inside the pipe between the spinner and the housing.

- The spreader auger may become jammed during work if larger stones or clumps of spreading material enter it. The spinner spreader has a hatch on its rear side that can be used to remove the blockage.

- When finishing work with the spreader and prior to uncoupling it from the tractor, always use the support legs in order to prevent the device from overturning.

CONTROL PANEL

1. Specifications

- Switching of the side lights.
- Integrated GPS device for driving speed measurement.
- Screen with background lighting.
- 35-AMPseal connection.
- 9-30V power supply.
- Positioning precision – 1,8 m (CEP95).
- Driving speed precision – 0,1 m/s.
- Updating frequency– 1 Hz.

Figure 1. Control panel of the spinner spreader. (SIIA TULEB UUS PILT KORRALIKE BALLOONIDEGA)

2. Overview of the control panel

1. **„System switch“** – Switch for switching the system on and off.
2. **„Serial Connector RS232“** – DB9 plug for connecting to a computer. Can be used to modify settings or to update the firmware.
3. **„UP“** – Button for navigating up in the menu.
4. **„ESC“** – Button for navigating back in the menu.

5. **„Lights (ON/OFF) / DOWN“** – Button for switching the side lights on and off / Button for navigating down in the menu.
6. **„ENTER“** – Button for confirming menu selections.
7. **„BLAST“**– Button for spreading the maximum spreading quantity as long as the button is pressed and held. Only functions while the spreading mode is activated (the green indicator #16 „SPREAD ON“ is on or blinking).
8. **„SPREAD START/STOP“** – Button for starting and stopping the spreading mode. The activation status of the spreading mode is indicated by the green indicator #16 „SPREAD ON“.
9. **„Material amount settings potentiometer“** – Knob for adjusting the material amount spread from minimum to maximum.
10. **„AmpSeal male connector 35 poles“** – Connector for connecting the control panel to the control box.
11. **„Spreading width settings potentiometer“** – Knob for adjusting the spreading width from minimum to maximum.
12. **„MENU“** – Button for entering the menu.
13. **„Backlit display“** – Control panel screen displaying the active spreading mode and parameters.
14. **„RIGHT / +“** - Button for moving the spinner to the right / Button for increasing values in the menu.
15. **„LEFT / -“** - Button for moving the spinner to the left / Button for decreasing values in the menu.
16. **„SPREAD ON“** – Indicator. The green light is on while the spreading mode is activated. The green light blinks while the automated spreading mode is activated but the driving speed is under 5 km/h or no GPS signal has been detected.
17. **„SPREADER ALARM“** – Indicator.

3. Power supply

The supply voltage for the spinner spreader can be either 12V or 24V DC. A spinner spreader with the standard equipment always has 12V supply voltage.

The 24V components are available as option. In order to convert a 12V device to a 24V device, three components must be replaced: the relay set, the magnet and the linear motor.

Always ensure that the supply voltage is correct in order to prevent faults!

Start the system with button #1 which starts the system if all connectors are correctly connected. When finishing the work or if the control panel is to be removed, always switch off the system from button #1.

4. Working mode selection

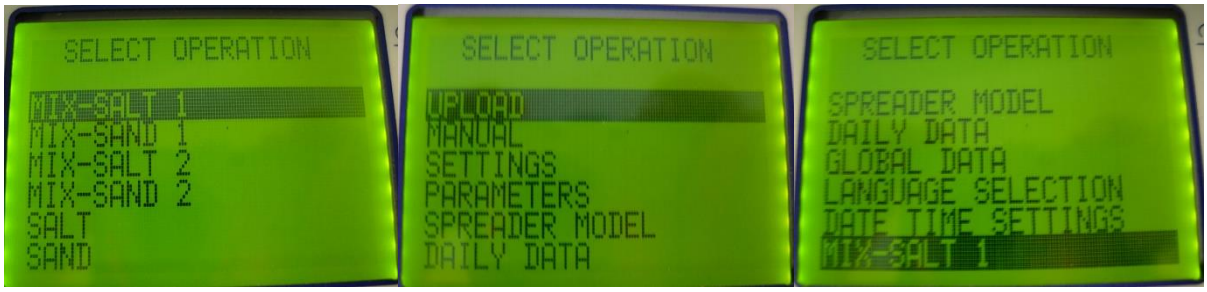

Figure 2. Control panel menu. (VÕIMALUSEL SIIA UUS PILT)

Press and hold button #12 „MENU“ to enter the menu. Use buttons #3 „UP“ and #5 „DOWN“ to navigate up and down in the menu. Press and hold button #12 „MENU“ to select a mode.

Available modes:

- **„SALT“** – salt spreading.
- **„SAND“** – granite grit spreading.
- **„MANUAL“** – manual mode.
- **„UPLOAD“** – not available.
- **„MIX-SALT 1“** – not available.
- **„MIX-SAND 1“** – not available.
- **„MIX-SALT 2“** – not available.
- **„MIX-SAND 2“** – not available.

- **„SETTINGS“ –** spinner and auger calibration.
- **„PARAMETERS“ –** parameters.
- **„SPREADER MODEL“ –** selection of combinations of modes A-H.
- **„DAILY DATA“ –** daily data (material quantity used, spreading quantity, driving distance in kilometers).
- **„GLOBAL DATA“ –** global data (material quantity used, spreading quantity, driving distance in kilometers).
- **„LANGUAGE SELECTION“ –** language selection.
- **„DATE AND TIME“ –** date and time settings.

5. Automated mode

When one of the automated modes „SAND/SALT“ is selected, the display is as shown on Figure 3.

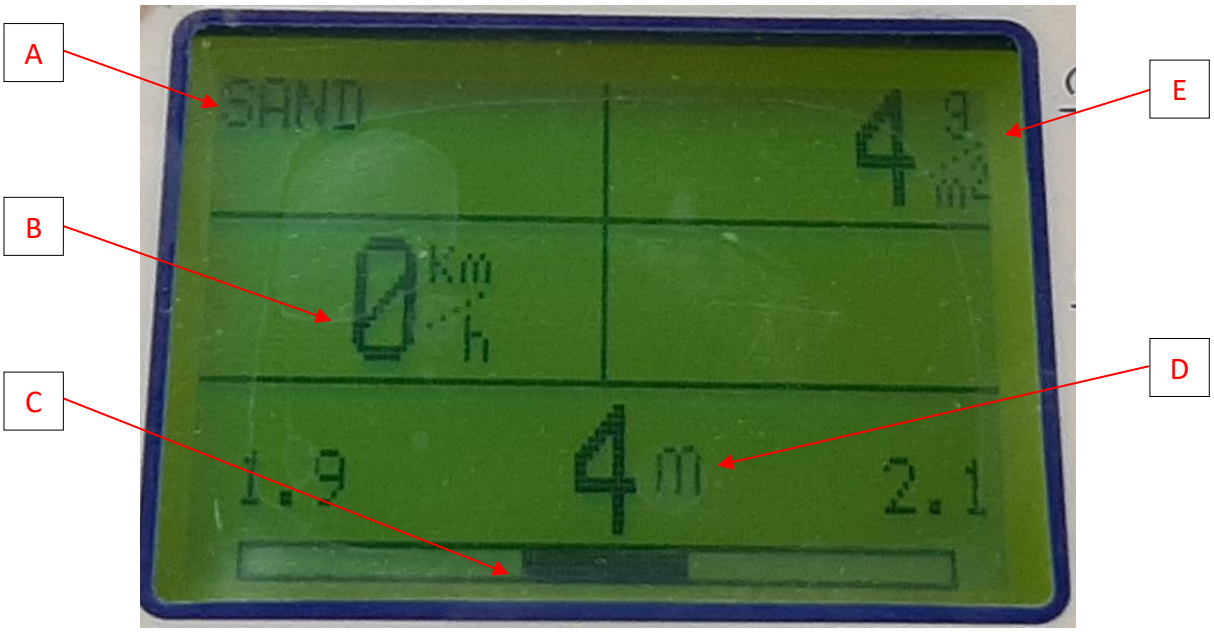

Figure 3. Working mode. (VÕIMALUSEL SIIA UUS PILT)

A. **Automated mode.**

B. **Driving speed km/h.**
   - Searching GPS connection: 0 km/h on a blinking black background.
   - Speed automatically detected by GPS: dark text on a light background (as shown on Figure 3).
   - Manual speed mode: light text on dark background (opposite to Figure 3).

C. **Spinner position.**
   - The dark line at the bottom edge of the screen, indicating the spinner position and consequently the spreading direction. The spreading direction can be adjusted using buttons #14 „RIGHT“ and #15 „LEFT“.

D. **Spreading width in meters.**
   - The value can be adjusted between 1 and 10 meters using knob #11.

E. **Spreading material amount g/m².**
   - The value can be adjusted between 5 and 200 g/m² using knob #9.

After selecting one of the automatic modes „SAND/SALT“ use button #8 „SPREAD START“ to start the spreading. The same button is used to stop the spreading. Automated spreading is based on the driving speed detected by the GPS device in the control panel.

The spreading activation status is indicated by indicator #16 „SPREAD ON“.

- The indicator blinks while the spreading mode is activated but not started because the vehicle stands still or no GPS signal has been detected yet. The indicator blinks – no spreading.

- The indicator is on while the spreading mode is activated and the vehicle is driving or if the manually selected speed is used. Indicator on – spreading in progress.
- The indicator is off if the spreading mode has not been activated with button #8 „SPREAD START“.

The driving speed must exceed 5 km/h in order to start the spreading after its activation.

The spreading is dependent on the driving speed, the spreading stops automatically if the speed decreases under 5 km/h. The spreading continues without any intervention from the operator when the driving speed exceeds 5 km/h.

If the driving speed exceeds the maximum limit, the system gives an audible warning from the control panel without stopping the spreading mode.

- If the system loses the GPS connection during the spreading, the latest detected speed is used. If the GPS signal is not restored within 10 seconds after the loss of the signal, the system gives an audible warning. Press button #8 „SPREAD STOP“ to stop the spreading. Then you can continue the spreading with a manually selected speed (see below).

- If the GPS signal detection is problematic (e.g. in areas with poor coverage or no signal), the speed indicator #B blinks on an alternately light and dark background. The control panel also gives an audible warning with 3-second intervals until the GPS signal is detected.

The speed shall be selected manually for spreading in areas without GPS signal:

- Press and hold briefly button #14 “MENU”.
- The display is as shown on Figure 4 (“MANUAL SPEED” is 0 km/h, as the spinner spreader is currently in the automatic GPS mode). Changing that speed switches the spinner spreader to the manual speed mode).

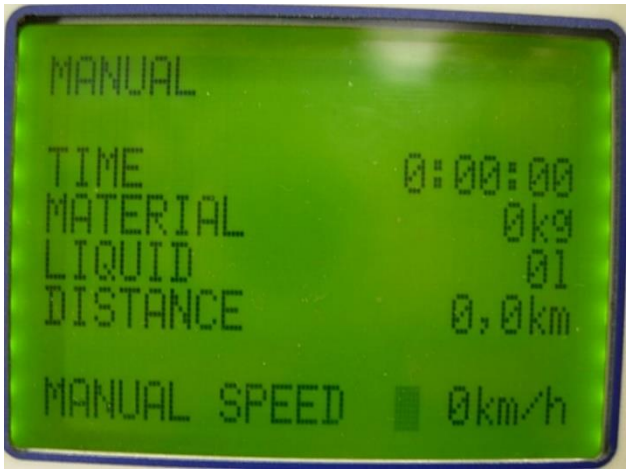

Figure 4. Manual speed mode. (SIIA UUS PILT)

- Select a suitable speed using buttons #14 (increases the speed by 5 km/h) and #15 (decreases the speed by 5 km/h).
- When the suitable speed is selected, confirm it by pressing and holding briefly button #14 “MENU”.
- Use button #8 “SPREAD START” to start the spreading.
- In order to return to the automatic GPS mode, change “MANUAL SPEED” 0 km/h (as shown on Figure 4).

In the manually selected speed mode (“MANUAL SPEED” over 0 km/h), the system will presume that the driving speed is equal to the selected speed during the spreading.

In order to spread material at the density displayed on the control panel, the driving speed must correspond to the selected speed. As the spinner spreader does not depend on the actual driving speed in this mode, use button #8 “SPREAD START/STOP” to start and stop the spreading (the spreading does not stop automatically).

“BLAST” #7 is a command that allows spreading of the maximum spreading amount while pressing and holding the button. This only functions while the spreading mode is activated. The spreading amount is temporarily changed to the the maximum value regardless of the driving speed and the selected spreading amount; this allows a more efficient spreading in more dangerous areas.

The „BLAST“ command is also active while the spreading is automatically stopped at a driving speed under 5 km/h. This enables spreading on crossroads while the vehicle stands still or accelerates to 5 km/h.

6. Manual mode

When „MANUAL“ is selected, the display is as shown on Figure 5.

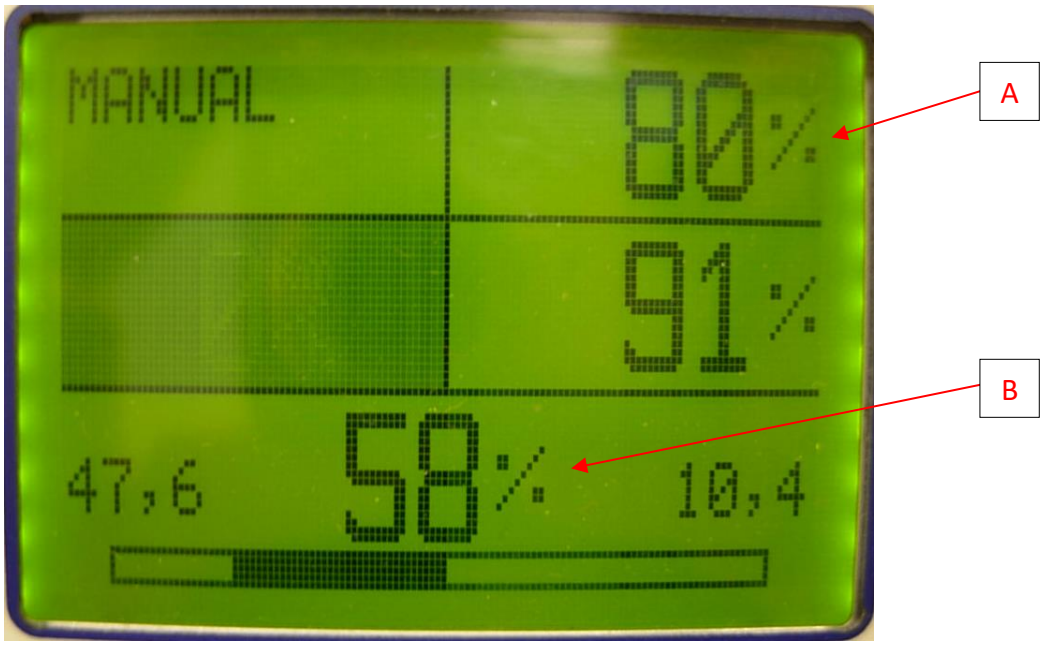

Figure 5. Manual mode. (SIIA UUS PILT)

A. **Flow for the auger proportional valve (value in %).** – The value can be adjusted between 0 and 100% using knob #9.

B. **Flow for the spinner proportional valve (value in %).** - The value can be changed between 0 and 100% using knob #11.

The manual model allows easy and fast controlling of the system functionality. The manual mode is practical for controlling the flow of the hydraulic components (the hydraulic motors of the auger and the spinner).

Use button #8 „SPREAD START/STOP“ to start and stop the spreading in the manual mode. The activation status of the manual mode is indicated by indicator #16. The driving speed is not regarded in the manual mode.

7. Calibration

The spinner spreader is factory calibrated for salt and granite grit and is ready for use. A new calibration may be necessary if a different spreading material is used or if parameters have been changed and the spinner spreader fails to function properly.

When „SETTINGS“ is selected, the display is as shown on Figure 5.

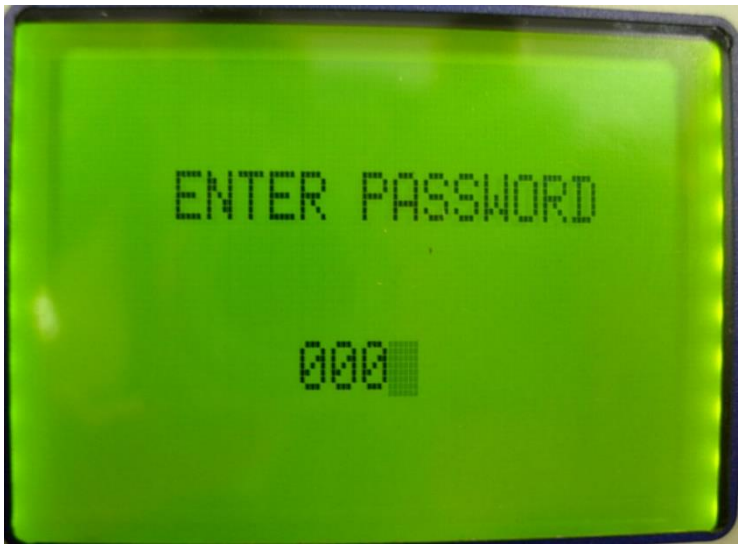

Figure 5. Password. (SIIA UUS PILT)

The system requires a 4-digit password which is: **1965**. Use buttons #3, #5, #14 och #15 to enter the password. Confirm the password with button #6 „ENTER“. If the password is correct, the hydraulic motors can be calibrated. If the password is incorrect, the values in the menus can be viewed but not changed. When the correct password is entered, the display is as shown on Figure 6.

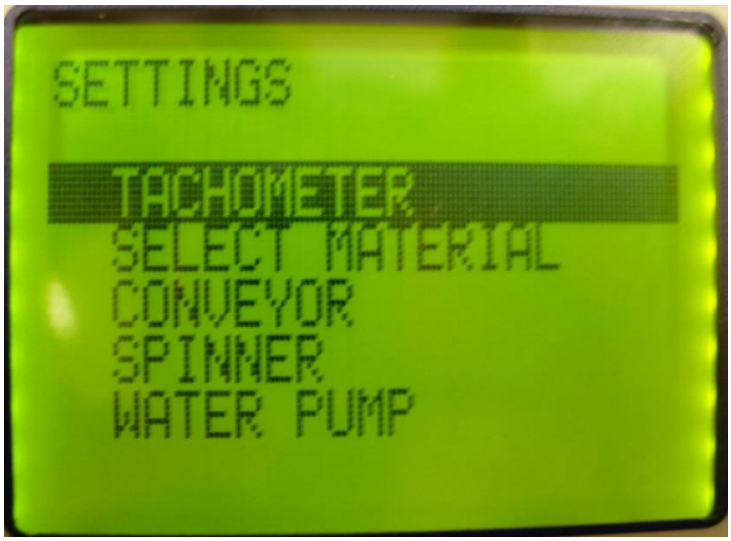

Figure 6. Settings. (PILT PRINDITUNA OK, VÕIMALUSEL UUS)

- **„TACHOMETER“** – not available.
- **„SELECT MATERIAL“** – selection of the material type.
- **„CONVEYOR“** – auger calibration based on the material.
- **„SPINNER“** – spinner calibration based on the material.
- **„WATER PUMP“ –** not available.

Use buttons #3 and #5 to navigate up and down in the menu and #12 „MENU“ to confirm a selection.

When „SELECT MATERIAL“ is selected, the display is as shown on Figure 7.

Figure 7. Material selection. (VÕIMALUSEL SIIA UUS PILT)

- **„SALT“** – calibration for salt.
- **„SAND“** – calibration for granite grit.
- **„SET SALT“** – not available.
- **„SET SAND“** – not available.

- **„MIX-SALT 1“** – not available.
- **„MIX-SAND 1“** – not available.
- **„MIX-SALT 2“** – not available.
- **„MIX-SAND 2“** – not available.

The auger („CONVEYOR“) and the spinner („SPINNER“) must be calibrated for each material. The material parameters (weight, particle size) may significantly affect the maximum spreading width and the spread quantity per time unit.

Use buttons #3 „UP“ and #5 „DOWN“ to navigate in the menu. Confirm the selected material with button #6 „ENTER“, „MATERIAL SELECTED“ is displayed on the screen.

Auger calibration

After confirming the material for the calibration, select „CONVEYOR“; the display is as shown on Figure 8.

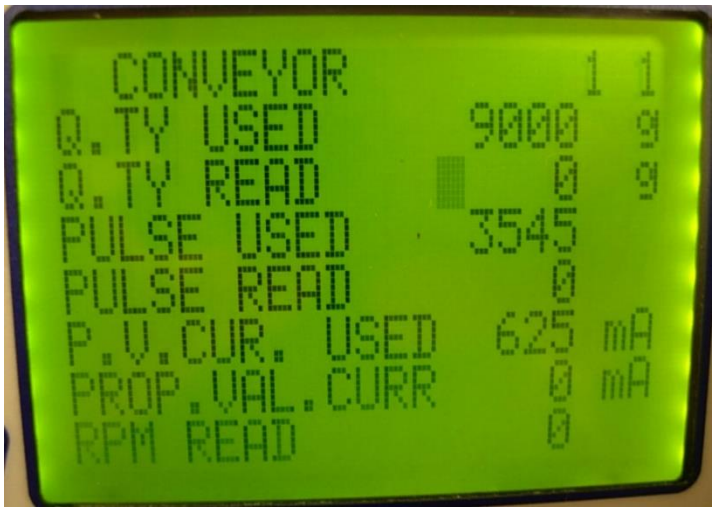

Figure 8. Auger calibration. (VÕIMALUSEL SIIA UUS PILT)

Data displayed:

- **„Calibration point“** – the number of calibration points (1).
- **„Quantity used“** – the material quantity used in grams (system parameter).
- **„Quantity read“** – the material quantity read in grams (entered manually after the test).
- **„Pulse used“** – the number of signals used (system parameter).
- **„Pulse read“** – the number of signals read (read by the system during the test).
- **„Proportional valve current used“** – the current used for the proportional valve (system parameter).
- **„Proportional valve current read“** – the current read for the proportional valve (read by the system during the test test).
- **„RPM read“** – the RPM read (read by the system during the test).

This test determines the system parameters for the spreading mode based on the selected material. The material must be selected in order to perform this test.
The test includes:

- Spreading material and collecting it in a container.
- Weighing the collected material.
- Entering the value in grams.

The spinner spreader must be loaded with sufficient spreading material for performing the test.
Prior to the test, run the spreading for at least a couple of minutes so that the auger grooves are filled with material.

- Prior to starting the test, weigh the container for collecting the material.
- Remove the spinner for easier collection of the material.
- Place the container under the spinner spreader, ensuring that all material is collected.
- After the test, weigh the container with the collected material. Then determine the weight of collected material by subtracting the weight of the empty container.
- It is recommended to collect 15 – 30 kg material for a correct calibration.

The calibration process is identical for different materials (salt/granite grit). Ensure that the correct material type has been selected.

The calibration process:

1. Use button #8 „SPREAD START“ to start the spreading.
2. Select the flow for the auger proportional valve by pressing and holding #7 „BLAST“ and using knob #9. When the button and the knob are released, the system retains the selected flow.
3. The system displays the RPM and the number of pulses during the spreading.
4. When the desired material quantity has been spread, use the button #14 „MENU“ to save the values used during the test.
5. Use the button #8 „SPREAD STOP“ to stop the spreading.
6. The weight to be entered after the test is displayed on the screen with a blinking cursor. Use the buttons #14 (for increasing) and #15 (for decreasing) to entering the weight of the collected material with 500 gram intervals.
7. After entering the determined weight, use button #7 „BLAST“ to confirm the entered value. The entered material weight is now also displayed on the row „Quantity used“.

When exiting the menu:

- Use button #6 „ENTER“ to save the collected data, „data saved“ is displayed on the screen.

- Use button #4 „ESC“ to exit the menu without saving the collected data, „parameters not saved“ is displayed on the screen. The prior data are retained.

Spinner calibration

When the auger calibration is finished, select „SPINNER“; the display is as shown on Figure 9.

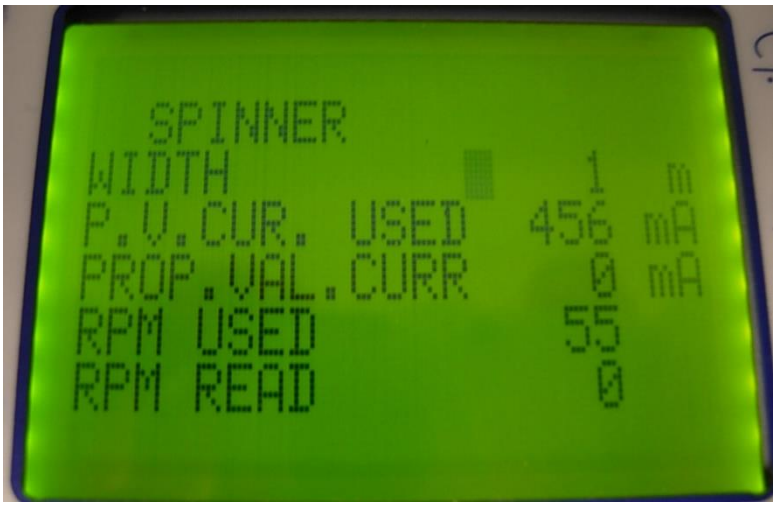

Figure 9. Auger calibration. (SIIA UUS PILT)

Data displayed:

- **„Width“ –** the spreading width in meters.
- **„Proportional valve current used“** – the current used for the proportional valve (system parameter).
- **„Proportional valve current read“** – the current read for the proportional valve (read by the system during the test).
- **„RPM used“ –** the RPM used (system parameter).
- **„RPM read“** – the RPM read (read by the system during the test).

This test determines the system parameters for the spreading mode that achieve the necessary spreading width based on the selected material. The material must be selected in order to perform the test. The test involves spreading the material and simultaneously monitoring the spinner speed in order to equalise the actual spreading width with the spreading width displayed on the screen.

The calibration process is identical for different materials (salt/granite grit). Ensure that the correct material type has been selected.

The calibration process:

The width displayed by default upon activation of the test corresponds to the minimum spreading width (1 meter in this example).

The spreading can be stopped during the test with button #8 „SPREAD START/STOP“ and continued with the same button.

If button #4 „ESC“ is pressed during the spreading, both the test and the spreading are stopped. The data already collected are not saved. The prior data are retained.

1. Use button #8 „SPREAD START“ to start the spreading. The system starts the spreading of the material while the spinner does not rotate or rotates very slowly.
2. Use knob #11 to adjust the spinner rotation speed until the displayed spreading width on the screen corresponds to the actual spreading width.
3. Use button #12 „MENU“ to confirm that the displayed spreading width corresponds to the actual spreading width.
4. Use buttons #3 „UP“ and #5 „DOWN“ to navigate to the next spreading width (2 meters in this example).
5. Continue as described above until the last spreading width (10 meters).
6. Use button #8 „SPREAD STOP“ to stop the spreading.

When exiting the menu:

- Use button #6 „ENTER“ to save the collected data, „data saved“ is displayed on the screen.
- Use button #4 „ESC“ to exit the menu without saving the collected data, „parameters not saved“ is displayed on the screen. The prior data are retained.

8. Parameters

When „PARAMETERS“ is selected, the system requires a 4-digit password which is: **1965**. Use buttons #3, #5, #14 och #15 to enter the password. Confirm the password with button #6 „ENTER“. If the password is correct, system parameters can be changed. If the password is incorrect, You can navigate in the menus and view the values but not change them. When the correct password has been entered, the display is as shown on Figure 9.

Figure 9. Parameters. (VÕIMALUSEL SIIA UUS PILT)

- **„CONVEYOR“** – the parameters of the auger hydraulic motor.

- **„SPINNER“** – the parameters of the spinner hydraulic motor.
- **„WATER PUMP“** – not available.
- **„SIMMETRY SENSOR“** – the linear motor sensor.
- **„PUBLIC“** – the public parameters.
- **„LIMITS“** – the limits.

The hydraulic motor parameters

When „CONVEYOR“ or „SPINNER“ is selected, the display is as shown on Figure 10.

Figure 10. Hydraulic motor parameters. (SIIA TULEVAD UUED PILDID MEIE ANDMETEGA)

The hydraulic motor parameters are factory-set. If the parameters should deviate from the parameters in Table 2 for any reason, they must be changed according to Table 2.

Table 2. The hydraulic motor parameters

	CONVEYOR	SPINNER
PPR	36	30
RPM MIN	11	31
RPM MAX	300	1000
SENSOR TYPE PNP	1	1
CURR. MIN	300	300
CURR. MAX	1150	1150

Use buttons #14 and #16 to change the values for selected parameters. Use button #6 „ENTER“ to navigate to the next parameter that can be changed.

When exiting the menu:

- Use button #12 „MENU“ to save changed data.
- Use button #4 „ESC“ to exit the menu without saving the changed data. The prior data are retained.

Linear motor sensor

When „SIMMETRY SENSOR“ is selected, the display is as shown on Figure 11.

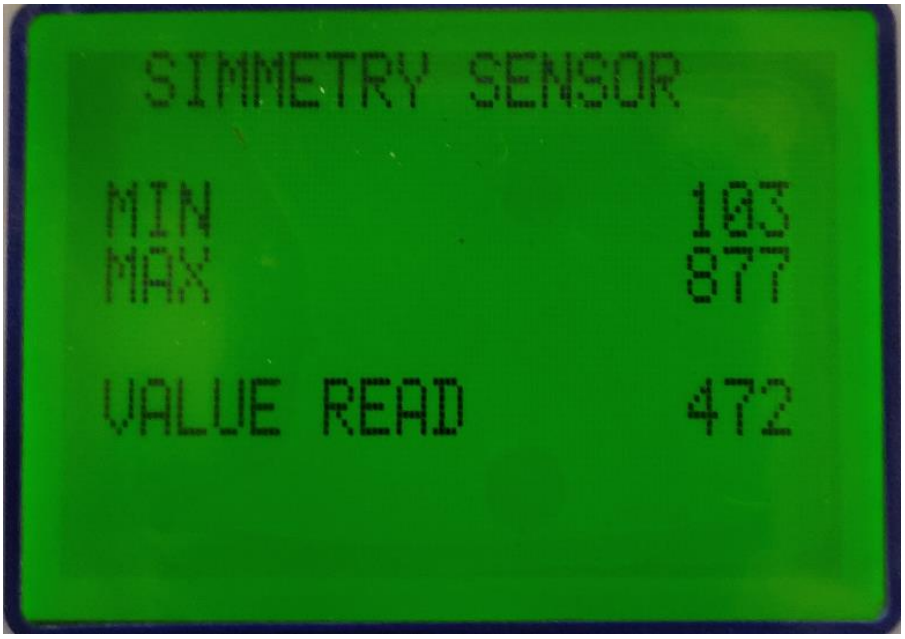

Figure 11. Linear motor parameters. (SIIA UUS PILT)

- **„MIN“** – the minimum position of the linear motor.
- **„MAX“** – the maximum position of the linear motor.
- „**VALUE READ“** – the position of the linear motor.

The values are displayed in bits (digital value between 0 and 1023).

Calibration of the linear motor sensor:

- Use buttons #14 „RIGHT“ and #15 „LEFT“ to move the linear motor into its maximum or minimum position.
- When the linear motor has been moved all the way to the right, save that value on the „MIN“ row using the button #5 „DOWN“.
- When the linear motor has been moved all the way to the left, save that value on the „MAX“ row using the button #3 „UP“.

Public parameters

When „PUBLIC“ is selected, the display is as shown on Figure 12.

Figure 12. Public parameters. (VÕIMALUSEL SIIA UUS PILT)

„GPS INSTALLED“ – GPS installed – 1 yes / 0 no.
„T VIBR. ON“ – not available.
„T PREHEAT. ON“ – not available.
„SIMM. INSTALLED“ – the linear motor sensor installed – 1 yes / 0 no.
„DIRECTION“ – the direction of the linear motor: (1 right-left), (0 left-right).

Use buttons #3 „UP“ and #5 „DOWN“ to navigate in the menu. Use buttons #14 „RIGHT“ and #15 „LEFT“ to increase or decrease values. Use button #6 „ENTER“ to navigate to the next row.

When exiting the menu:

- Use button #12 „MENU“ to save changed data.
- Use button #4 „ESC“ to exit the menu without saving the changed data. The prior data are retained.

Limits

When „LIMITS“ is selected, the display is as shown on Figure 13.

Figure 13. The Limits menu. (VÕIMALUSEL SIIA UUS PILT)

The menu allows You to determine the limits for different materials. Use buttons #3 „UP“ and #5 „DOWN“ to select the material. Confirm the selection with button #12 „MENU“, then the display is as shown on Figure 14.

Figure 14. Limits. (VÕIMALUSEL SIIA UUS PILT)

- Maximum spreading quantity g/m².
- Liquid percentage – not available.
- Maximum spreading width in meters.

Use buttons #14 „RIGHT“ and #15 „LEFT“ to increase or decrease values. Use button #6 „ENTER“ to navigate to the next row.

When exiting the menu:

- Use button #12 „MENU“ to save changed data.
- Use button #4 „ESC“ to exit the menu without saving the changed data. The prior data are retained.

9. Language selection

When „LANGUAGE SELECTION“ is selected, the display is as shown on Figure 15.

Figure 15. Language selection. (VÕIMALUSEL SIIA UUS PILT)

Language options for the control panel:

- English
- Italian
- Turkish
- Russian

Use buttons #3 „UP“ and #5 „DOWN“ to select different languages.

When exiting the menu:

- Use button #12 „MENU“ to save changed data.
- Use button #4 „ESC“ to exit the menu without saving the changed data. The prior data are retained.

10. Date and time

When „DATE TIME SETTINGS“ is selected, the display is as shown on Figure 16.

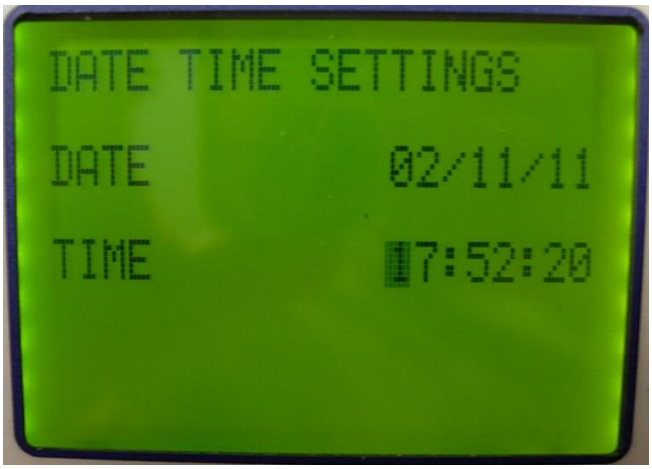

Figure 16. Date and time settings. (VÕIMALUSEL SIIA UUS PILT)

- Date: day/month/year
- Time: hour/minute/second

Use buttons #14 „RIGHT“ and #15 „LEFT“ to increase or decrease values. Use button #6 „ENTER“ to navigate to the next row.

When exiting the menu:

- Use button #12 „MENU“ to save changed data.
- Use button #4 „ESC“ to exit the menu without saving the changed data. The prior data are retained.

11. Daily data

When „DAILY DATA“ is selected, the display is as shown on Figure 17.

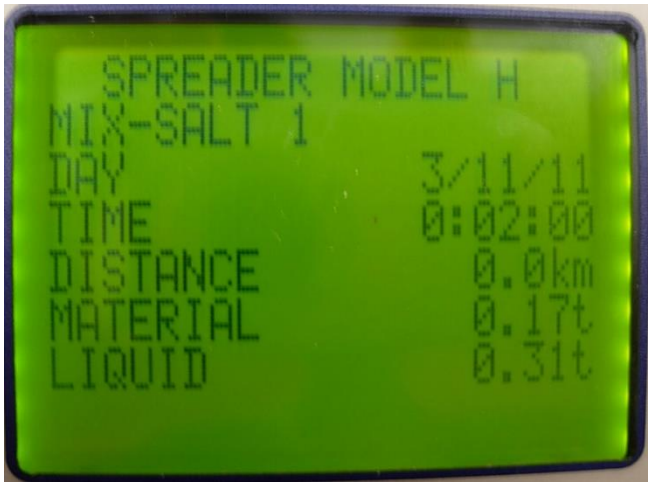

Figure 17. Daily data. (VÕIMALUSEL SIIA UUS PILT)

- **„MACHINE MODEL“** – the spinner spreader model.
- **„MATERIAL“** – the type of material used.
- **„DAY“** – date (day/month/year).
- **„TIME“** – spreading time (hours/minutes/seconds).
- **„DISTANCE“** – the driving distance in kilometres.
- **„MATERIAL“** – the spread material quantity in tonnes.
- **„LIQUID“** – not available.

The system saves daily data for the selected spinner spreader model based on the type of material.

Use buttons #3 „UP“ and #6 „DOWN“ to navigate in the menu and to view previous saved data. Use button #12 „MENU“ to exit the menu.

12. Global data

When „GLOBAL DATA“ is selected, the display is as shown on Figure 18.

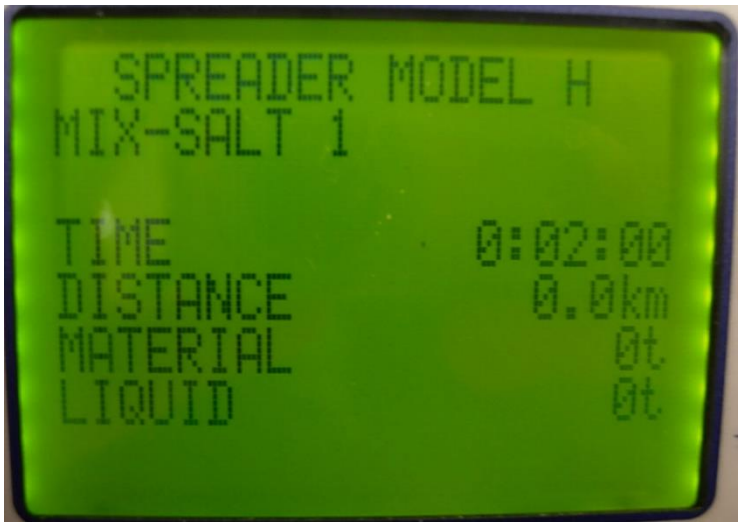

Figure 18. Global data. (VÕIMALUSEL SIIA UUS PILT)

- **„MACHINE MODEL“** – the spinner spreader model.
- **„MATERIAL“** – the type of material used.
- **„TIME“** – spreading time (hours/minutes/seconds).
- **„DISTANCE“** – the driving distance in kilometres.
- **„MATERIAL“** – the spread material quantity in tonnes.
- **„LIQUID“** – not available.

Data for each available spinner spreader model related to the specific material are stored from the first working day to the present day.

Use buttons #3 „UP“ and #6 „DOWN“ to navigate in the menu and to view data on different material types for the specific spinner spreader model. Use button #12 „MENU“ to exit the menu.

MAINTENANCE

The device needs regular maintenance in order to ensure its reliable functioning in the long term.

Observe the following during the period of active use:

- Use personal protective equipment (safety goggles, protective gloves etc.).
- The tractor engine shall be switched off during maintenance of the spinner spreader while it is coupled to the tractor.
- Ensure that the device is properly supported during maintenance.
- Clean the device after each use. A pressure washer and a suitable cleaning agent may be used. Never point the washer jet directly towards any hydraulic components, the control box, the linear motor or any stickers.
- Check the entire machine visually.
- Any slack or deformation discovered must be corrected immediately.
- Check the hydraulic hoses on a regular basis. Replace them immediately if any sign of wear, damage or leakage is discovered.
- Check the condition of the joints daily.
- Check the tightness of the fastening bolts and nuts daily. Loosened bolts may lead to an accident with serious consequences.
- Check the chain tension at least once per working season. The chain is tensioned by moving the hydraulic motor forward.
- Check the condition of the spinner and the wings daily and tighten the bolts or replace them if necessary.
- The positions of the grease nipples are shown on Figure 19. Grease after each 40 working hours or as necessary.
- Oil the chain and chain rollers in the chain housing at least once in a working season using an oil can. The cover of the chain housing shall always be tightly closed.

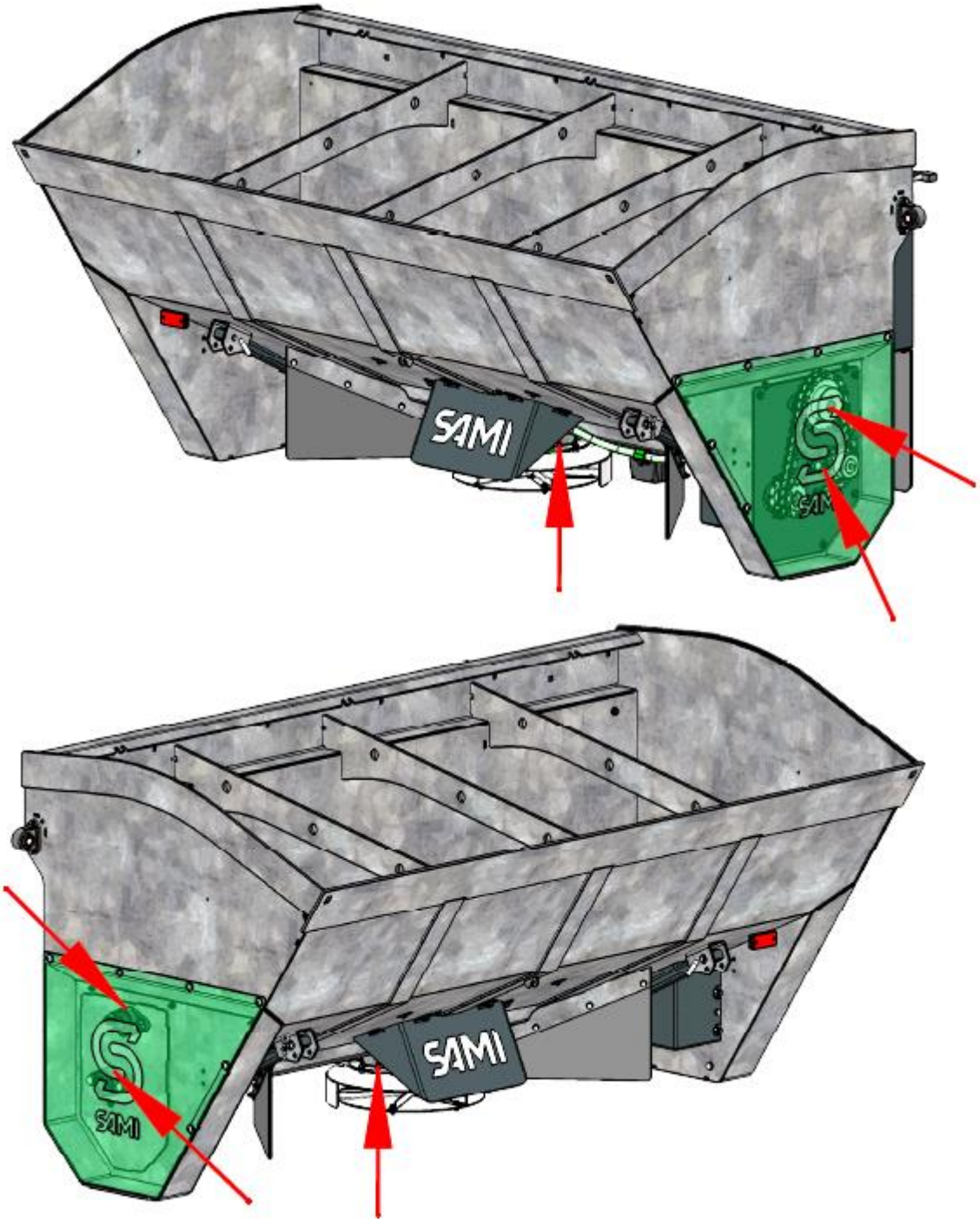

Figure 19. Positions of the grease nipples.

- Ensure that all bearings and joints,the chain and the cogs of the spinner spreader are always sufficiently lubricated.

If the device is to be stored for a prolonged period, take the following measures:

- Clean the device thoroughly.
- Spray a suitable corrosion protection lubricant onto the hose ends and the hydraulic cylinder rods.
- Repair any damage to painted and galvanised surfaces.
- Check the device for parts that need replacing. Make the preparations for the next working season if necessary.
- Never leave the device standing directly on the ground. Place it on e.g. a pallet or on wooden beams.
- Store the device in a place protected from sunlight and precipitation but open for the wind.
- If You encounter any problems with the maintenance, please contact the service centre of the distributor of the device.

WARRANTY

SAMI AS guarantees twelve (12) months warranty for the product from the date of purchase.

- The warranty covers material and workmanship defects occurred during the warranty period.
- Contact the authorised distributor from which the product was purchased in order to make a warranty claim.
- Send the serial number and/or the year of manufacture of the device to the distributor together with evidence in the form of photos and videos as well as a precise description of the defect. The evidence shall include photos of the label, the faulty part and the entire device.
- The distributor will communicate with the manufacturer and inform the customer of the decision.
- If necessary, the distributor will ask the customer to send additional information about the incident or the faulty details.
- All **warranty cases accepted** by AS SAMI are compensated.
- The manufacturer either repairs the faulty components or replaces them or compensates for the cost of the components.
- Subcontracted components are covered by the warranty of the respective manufacturer.

The warranty does not cover:

- Consumables
- Outage and other external costs and damages
- Transport costs (travel and shipping costs)
- Overtime and daily allowance
- Damage due to careless use or use that exceeds the approved technical specifications according to this manual.

The warranty does not cover damage due to:

- Careless and incorrect use of the product.
- Failure to comply to the manufacturer’s use and maintenance instructions.
- Normal wear and tear.
- Abnormal conditions of use.
- Overloading or any other unintended use.
- Lack of maintenance and inspection.

- Repairs performed with poor quality.
- Use of low-quality oil or grease (incorrect or contaminated oil or grease).
- Damage to hydraulic hoses and couplings due to external factors.
- Repairing equipment components modified by the user.
- Using other spare parts and equipment than original products by SAMI.
- Prolonged storage (e.g. paint or corrosion damage).
- The manufacturer accepts no liability whatsoever for any work outage or other consequential damage due to any fault in the product.

All warranty conditions only apply to a new product purchased from a seller authorised by AS SAMI. The warranty does not apply to a resold product.

AS SAMI
Tule 20, 76505 Saue
Harjumaa, Estonia

Phone: +372 670 9040
E-mail: sami@sami.ee
www.sami.ee