



**STRIKESMART™**



# 2.0 CONTROLLER USER GUIDE

HILLTIP ICESTRIKER™ SPREADERS &  
SPRAYSTRIKER™ SPRAYERS

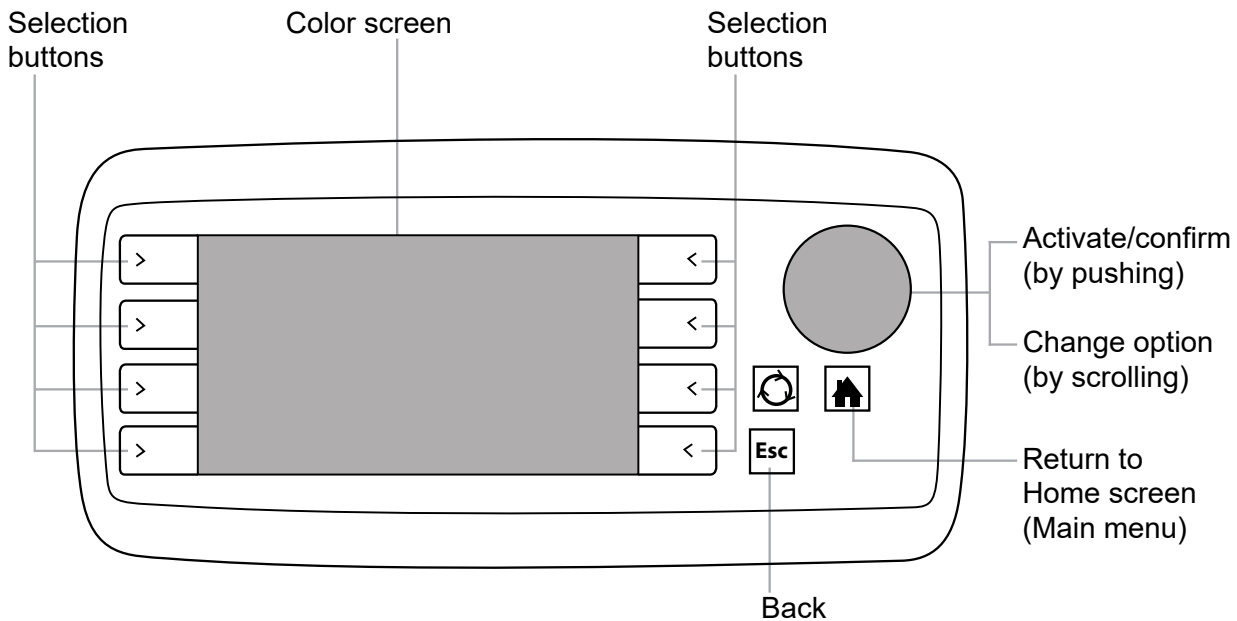
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## INTRODUCTION

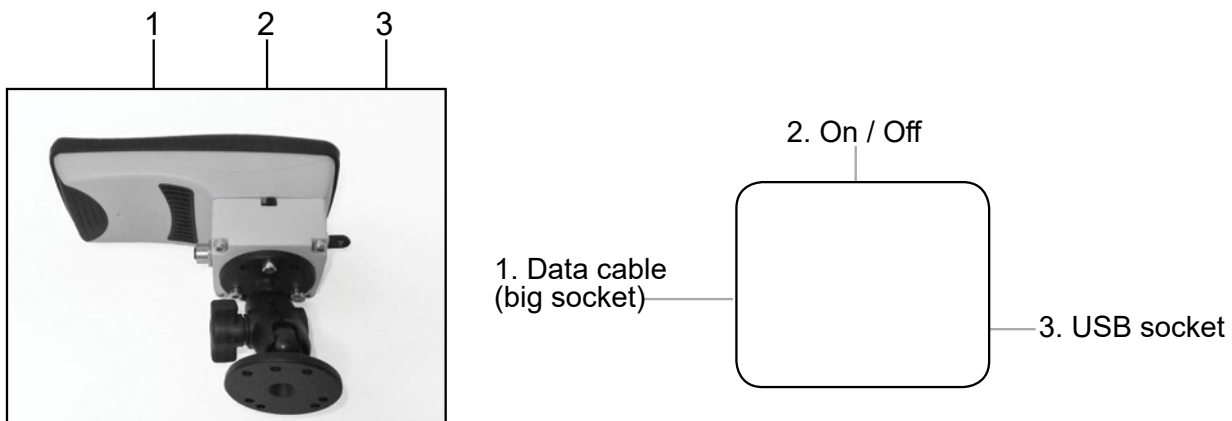
This controller is designed for your new Hilltip IceStriker™ spreader or SprayStriker™ sprayer. You will get a highly personalized spreading experience by carefully adjusting all the settings. The calibration function will help you reach the most accurate spreading results with your standard materials.

You will get the most out of your spreader/ sprayer by reading and understanding this User Guide.

## CONTROLLER PARTS



### On the back of the controller:



# OPERATING THE CONTROLLER

## Main menu

### Selecting spreading mode

Before starting your basic spreading session, select presets, automatic or manual spreading mode by pushing the selection button next to your choice. Automatic mode will adjust the amount of spreading material (g/m<sup>2</sup>) according to your vehicle speed. Read more about the different spreading modes on page 12-15.

When the sprayer is equipped with handspray or/and spraybar and these are activated in machine settings (Main menu → Settings → Machine → Model), you can select them directly from the main menu.

### HTrack

Read more about HTrack Modem settings, Subscription, Settings and Statistics in the HTrack user guide.

### Settings

This menu lets you adjust the settings according to your own spreader, so that you can get an optimized spreading session (see page 5-9).

### Info

Error codes: Shows error codes.

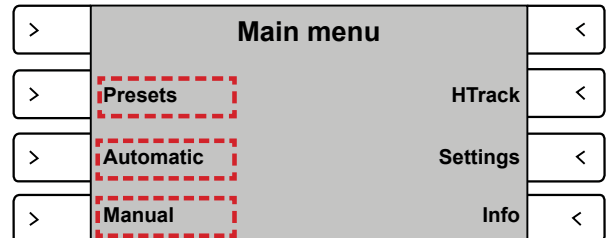
GPS: Shows GPS Information

Service: Shows operating hours and service.

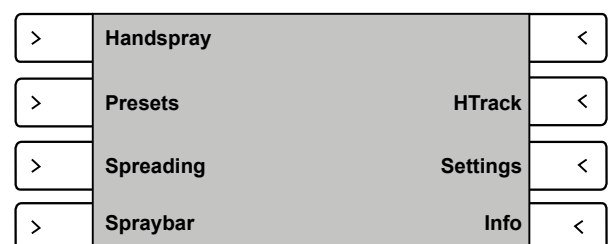
Trip log: Shows information about the log.

About: Shows controller and module versions etc.

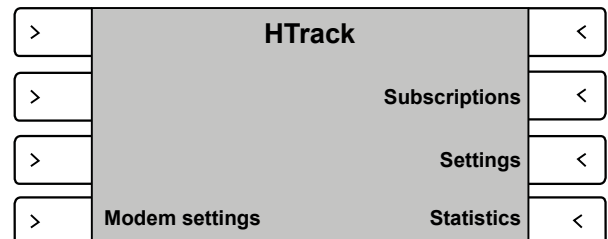
Users can see if they have the latest software installed or if a new version of IceStriker/ SprayStriker software is available. For users with HTrack or Internet access, it is possible to install the latest update from the controller (see page 10-11).



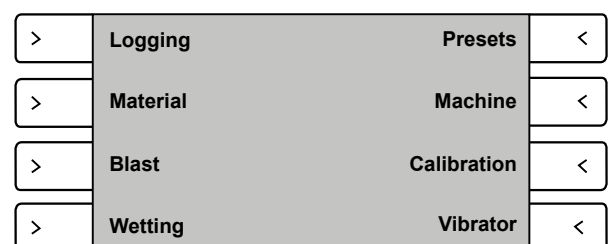
Main menu with Presets and HTrack



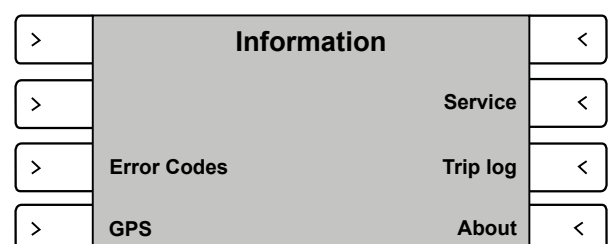
Main menu with the optional features handspray and spraybar activated.



HTrack menu



Settings menu with Presets (IceStriker)

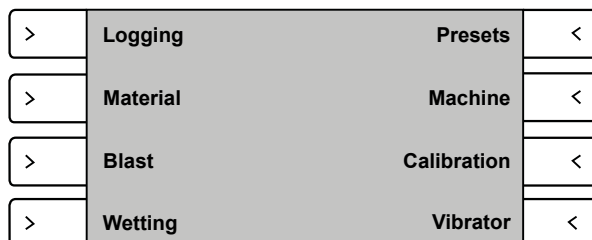


Info menu

## Settings menu

### Settings menu view

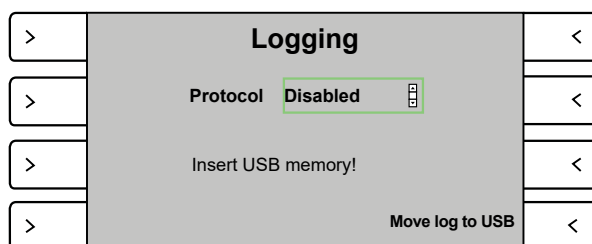
Go to the desired submenu by pushing the selection button next to it.



### Logging

Go to Settings → Logging

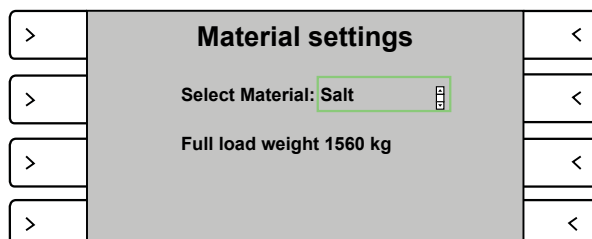
Scroll the round button to browse protocol. Choose **Disabled** if you use presets, **HTrack** if you use Hilltip tracking system, **DIN EN 15430** if you use an external tracking system. Push the round button once to select protocol. (This function will be selectable from the main menu, see page 4).



### Select Material

Go to Settings → Material

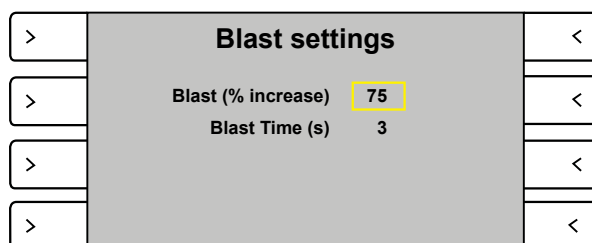
Scroll the round button to browse between spreading materials (Salt, Sand, Gravel, Custom1, Custom2). When your desired material shows up, push the round button once to select it. It is also possible to adjust the full load weight parameter for the material that is being used.



### Blast settings

Go to Settings → Blast

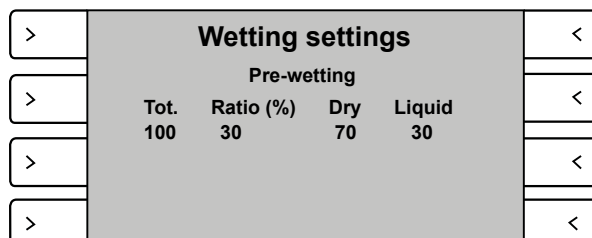
“Blast (% increase)” increases the auger speed/intensity (30 to 100 % of current amount). “Blast Time (s)” sets the blast time in seconds. Browse between the two areas by scrolling the round button, you will see the yellow box changing. Select the area you want to change by marking it with the yellow box, push the round button to confirm your selection. The box will turn green, you can now increase or decrease the value by scrolling the round button, push the round button again to confirm the selected value.



### Wetting settings

Go to Settings → Wetting

Select the ratio between dry and liquid material.



## Presets configuration

Go to Settings → Presets

Push and scroll the round button to select material, fill in the Type, Mode, Width, Application rate and select optional features (work light, beacon, vibrator, pre-wet) .This function will be selectable from the main menu, see page 4.

Presets configuration						
Select material: Salt						
Type	Mode	Width	Application rate			
1 Solid	Automatic	2.0 m	24 g/m <sup>2</sup>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
2 Liquid	Manual	- m	2.8 l/min	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Solid	Automatic	2.5 m	10 g/m <sup>2</sup>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3 Solid	Manual	0.0 m	0 %	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

## Machine settings

Go to Settings → Machine

This view lets you set language, spreader model, time and date, auto spinner width, backlight and unit system by pushing and scrolling the round button.

Machine settings	
Language	English
Model	550
Time and date	Set time and date
Auto spinner width	Disabled
Backlight	Adjust backlight
Unit system	Metric, g/m <sup>2</sup>

Machine settings

## Spreader configuration

Go to Machine → Model

Under “Model” users will see the spreader configuration and be able to select a specific spreader model. Optional features like hand spray, spraybar, pre-wet, Secondary pump, directional control, 24V etc. can be activated in this menu. When handspray and spraybar are activated/checked they will be selectable from the main menu.

**NOTE:** Check that the correct spreader model is selected!

**NOTE:** Two different electrical configurations exist for dual pump installations. It is important that correct configuration is set in the controller. Push and scroll the round button to choose between “Auger output” and “Vibra 2 output”.

**NOTE:** It is possible to choose PIN code protection for spreader configuration view.

Spreader Configuration	
Model	900
Ask PIN for configuration	<input type="checkbox"/> (PIN: “2580”)
Handspray	<input checked="" type="checkbox"/>
Pre-Wet	<input checked="" type="checkbox"/>
Spraybar	<input checked="" type="checkbox"/>
Secondary pump	Vibra 2 output
24V	<input type="checkbox"/>

Spreader configuration

## Time and date

Go to Machine → Time and date

**NOTE:** Check that date and time is accurate.

## Auto spinner width

Go to Machine → Auto spinner width

Auto spinner width is enabled: The application rate stays the same but spreading width automatically becomes narrower if the vehicle speed increases so much that the set application rate can no longer be met.

Time / Date	
Time difference	
DST	4
Time	Wintertime
Date	12:03:35
	12 / 12 / 2020
Sync with	GPS time

Time and date

Machine settings	
Language	English
Model	550
Time and date	Set time and date
Auto spinner width	Enabled
Backlight	Adjust backlight
Unit system	Metric, g/m <sup>2</sup>

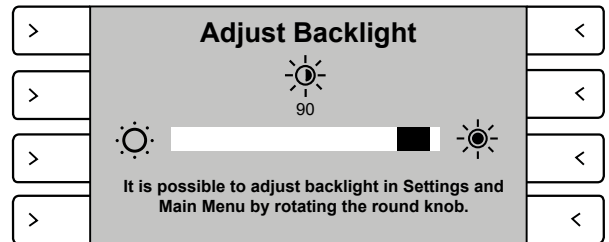
Auto spinner width

## Adjust Backlight

Go to Machine → Backlight

Scroll the round button to change the backlight.

**NOTE:** It is also possible to adjust backlight in Main Menu by rotating the round button.

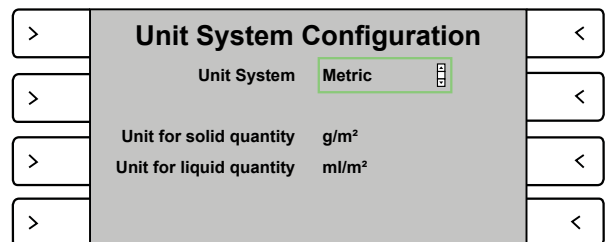


Adjust backlight

## Unit system configuration

Go to Machine → Unit system

Select unit system and unit for solid/ liquid quantity by scrolling and pushing the round button.



Unit system configuration

## Calibration

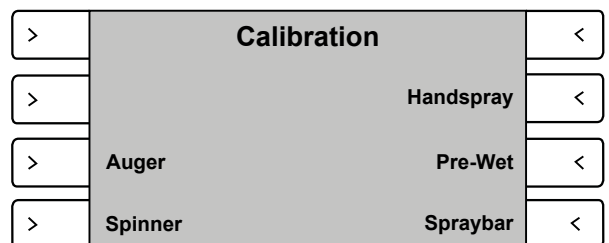
Go to Calibration, select the unit you want to calibrate.

**To calibrate the auger**, choose a material by scrolling and pushing the round button. The auger calibration includes 4 calibration points. Follow the instructions and press start. Weigh the material after each calibration session and enter a numeric value in kg in the box. Press OK.

**Note:** If spreader is equipped with conveyor it is possible to adjust the hatch opening before starting calibration.

**To calibrate the spinner**, choose a material by scrolling and pushing the round button. The spinner calibration includes 4 calibration points. Follow the instructions and press start. Measure the spreading width after each session and enter a numeric value in feet in the box. Press “Save” to continue to the second calibration point.

**Note:** If spreader is equipped with electrical chute adjustment, the spreading picture should be adjusted for each calibration point. It is done by rotating the rotation knob.



Calibration view

Material	kg/min			
	#1	#2	#3	#4
Salt	1.0	2.0	3.0	4.0
Sand	1.0	2.0	3.0	4.0
Gravel	1.0	2.0	3.0	4.0
Mix	1.0	2.0	3.0	4.0
Custom	1.0	2.0	3.0	4.0

Material	m			
	#1	#2	#3	#4
Salt	1.0	2.0	3.0	4.0
Sand	1.0	2.0	3.0	4.0
Gravel	1.0	2.0	3.0	4.0
Mix	1.0	2.0	3.0	4.0
Custom	1.0	2.0	3.0	4.0

### Calibrate the Handspray

The handspray calibration includes 4 calibration points. Press start and follow the instructions.

Calibration Handspray	
Calibration point	l/min
#1	1.0
#2	2.0
#3	3.0
#4	4.0

**Start**

**To calibrate the Pre-wet**, insert the liquid density by pushing and scrolling the round button. The pre-wet calibration includes 4 calibration points. Press start and follow the instructions.

Calibration Pre-wet Pump	
Liquid density (T/m <sup>3</sup> )	1.20
Calibration point	l/min
#1	1.4
#2	3.9
#3	5.2
#4	7.0

**Start**

### To calibrate the Spraybar:

Go to Calibration → Spraybar

In the **Spraybar Settings** view you can adjust some parameters by pushing and scrolling the round button.

**The three first parameters are the width of the spraying.** You need to run the pump(s) and see how far it sprays to the left and right and update the value if needed. The width of the spray pattern is dependent on the pump pressure. Users will need to find an average value or calibrate for the pressure used most often. Also the spraybar width can be adjusted if needed.

**Liquid density** can be adjusted.

**Minimum flow:** When using auto mode the pump(s) will not go under the minimum flow to make sure there is a good spray also on low vehicle speed.

If you use an IceStriker spreader with dual pumps or a SprayStriker sprayer (Image 2):

**Start second pump at x % of max:** To keep a good spray also on low vehicle speed only one of the pumps are in use. When the vehicle speed increases, the pump speed will also increase and at some point the second pump will start. This setting defines when the second pump will start.

Spraybar Settings	
Spread width left (m)	1.0
Spread width right (m)	1.0
Spraybar width (m)	2.0
Liquid density (T/m <sup>3</sup> )	1.2
Minimum flow (l/min)	4

**Start**

Image 1. Spraybar settings when using one pump.

Spraybar Settings	
Spread width left (m)	1.0
Spread width right (m)	1.0
Spraybar width (m)	2.0
Liquid density (T/m <sup>3</sup> )	1.2
Minimum flow (l/min)	4
Start second pump at x % of max	70

**Start**

Image 2. Spraybar settings when you use a SprayStriker or an IceStriker spreader with two pumps.

The Spraybar, SB + EN (spraybar nozzles and left end nozzle) and All nozzles (spraybar and end nozzles) are calibrated separately (image 3). The spraybar calibration includes 4 calibration points.

1. Please ensure that personal protective equipment is worn and check that the operation is conducted in a suitable, flat, area.
2. Place buckets underneath all the nozzles to collect the fluid (Image 6).
3. Select which nozzles (Spraybar, SB + EN or All nozzles) you want to calibrate by scrolling and pushing the round button. Push Start (Image 5) and wait for the controller to count down from 60 to 0 while the pump is running.
4. Weigh all the buckets and enter the total weight in kg or lbs for calibration point 1 (exclude the weight of the bucket itself).
5. Repeat the procedure for calibration point 2, 3 and 4.

**NOTE:** The weight you insert will be converted to liter or gallon per minute in the table.

If the spreader has dual pumps they are calibrated separately.

**NOTE:** Two different electrical configurations exist for dual pump installations (Auger output and Vibra 2 output) and the calibration also differs depending on which electrical configuration the pump has. See image 4.1 and 4.2.

**NOTE:** If you have an IceStriker spreader with dual pumps, make sure that the “Secondary pump” is set to “Auger output” or “Vibra 2 output” in the settings → machine settings → model → spreader configuration (see page 6).

Calibration Spraybar			
Calibration point	l/min		
	Spraybar	SB+EN	All nozzles
#1	3.9	4.1	4.1
#2	7.3	8.1	8.3
#3	10.6	11.8	12.2
#4	14.1	14.4	15.0

SB + EN: Spraybar nozzles and left end nozzle

Image 3. Spraybar Calibration with one pump

Calibration Spraybar						
Calibration point	l/min					
	Spraybar		SB + EN		All nozzles	
	P1	P2	P1	P2	P1	P2
#1	3.9	2.0	4.1	2.2	4.1	2.4
#2	7.3	4.0	8.1	4.8	8.3	8.1
#3	10.6	6.0	11.8	9.0	12.2	11.0
#4	14.1	8.0	14.4	10.0	15.0	13.1

SB + EN: Spraybar nozzles and left end nozzle

Image 4.1. Spraybar Calibration with two pumps (Secondary pump: Auger output)

Calibration Spraybar			
Calibration point	l/min		
	Spraybar	SB+EN	All nozzles
#1	3.9	4.1	4.1
#2	7.3	8.1	8.3
#3	10.6	11.8	12.2
#4	14.1	14.4	15.0
#4 (pump 2)	8.0	10.0	13.1

SB + EN: Spraybar nozzles and left end nozzle

Image 4.2 Spraybar Calibration with two pumps (Secondary pump: Vibra 2 output)

Calibration liquid pump	
Calibration point 1	1
Active valves	Spraybar
Pump	Pump 1
When pressing 'start' the liquid pump will run for 60 seconds. Press 'Go to next' to go to next calibration point.	
<input type="button" value="Start"/>	<input type="button" value="Go to next"/>

Image 5.



Image 6.

### Set vibration interval

Go to Settings → Vibrator

“Auto vibration interval (s)” - Insert how long the vibrator should be paused.

“Auto vibration time (s)” - Insert how long the vibrator should run.

**NOTE:** If you are using a spreader model with 2 vibrators you can change settings for both of the vibrators.

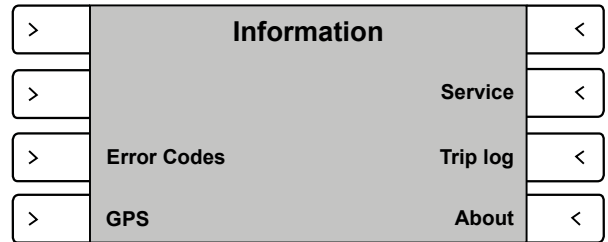
Vibrator Settings	
Auto vibration interval (s)	100
Vibra 1: Auto vibration time (s)	2
Vibra 2: Auto vibration time (s)	0

Vibrator

## Info menu

### Info menu view

Go to the desired submenu by pushing the selection button next to it.

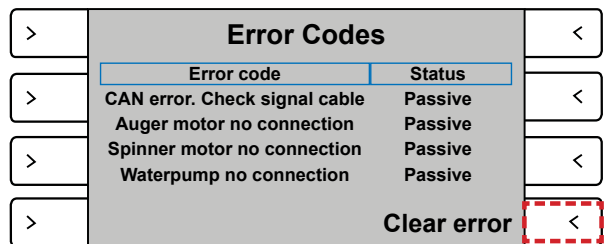


Info menu

### Error Codes

Go to Info → Error Codes

The error code view shows error code and error code status. Clear error codes by pushing the selection button.

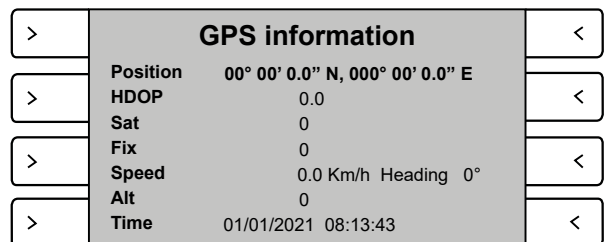


Error codes view

### GPS

Go to Info → GPS

This view shows GPS Information.



GPS information view

### Operating hours and service

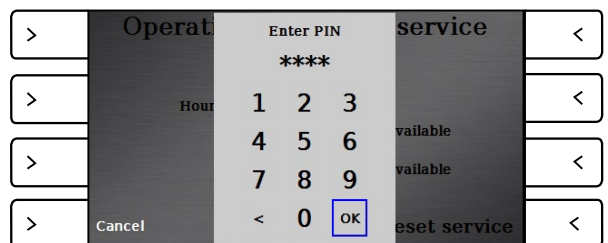
Go to Info → Service

The spreader is recording operating hours when the spreader is started with the motors running. This information is stored in the Spreader module and is displayed in Controller service view. After a service has been done the service should be cleared by pressing "Reset service". The code for clearing service is 2580.

When pressing "Reset service" the "Hours after last service" parameter is set to 0 and "Last service" date is updated. This information is also sent to HTrack™ where it is possible to add more information.



Service view



Enter PIN 2580 to reset service.

## Trip Log

Go to Info → Trip log

In the Trip Log view (Info → Trip log) the user can see the calculated amount of material in the spreader. When loading the spreader with material, the user needs to give the controller information on how much material has been loaded. If the spreader has been fully loaded, the user can push the “Set full load” button which sets the “Material in spreader” to the full load weight defined in the Material Settings view (see page 5).

If the spreader has not been fully loaded, the user can manually adjust the “Material in spreader” to what has actually been loaded. A bar indicator visually shows how much material is left. The same indicator is shown in the Spreading view. An estimation of how far you can drive with the current settings (width, application rate g/m<sup>2</sup> or lbs/1000 sq ft) is shown under the bar indicator.

## About

Go to Info → About

Shows controller and module versions etc. Users can see if they have the latest software installed or if a new version is available. For users with HTrack or an internet connection via modem or Wi-Fi it is possible to download and install the latest software directly from the controller. This option can be disabled in the HTrack portal. If the update from the controller is blocked users can't see the install button in the controller (see page 16).

Push the round button to see the change log. Here user can see software version updates, new features, bugfixes etc.

Trip Log		
Distance	0,0 (km)	Clear
Solid material	1668 (kg)	
Liquid material	0 l	
Time	107 h 0 min	
Log started	Value not set	
Material in spreader	3000 (kg)	Set full load
30,0 km to empty with current settings		

Trip log view

		2.6 m (1 - 10 m)	HTRACK
		30 g/m <sup>2</sup> (5 - 60 g/m <sup>2</sup> )	
	Salt	15 km/h	01.00

Bar indicator in the spreading view.

Versions		
IceStriker (installed)	0.47	Change log
IceStriker (available)	0.48	Install
Controller SW	3.0.48 (3.0.55)	
OS	3.0.101-rt130-opus3-2.2.2-2	
IO_Module SW	4.3	
IO_Module HW	0.8	
Serial Nr	1731331CA	

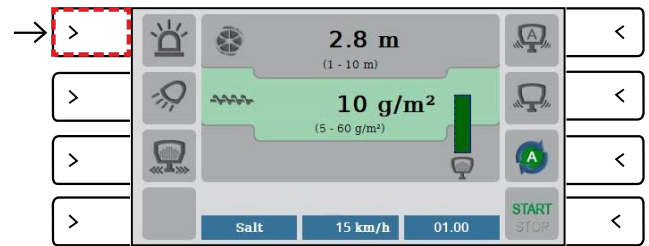
About

## Spreading mode

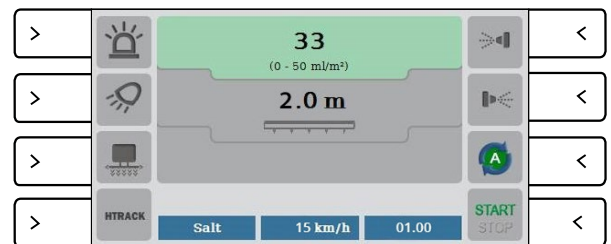
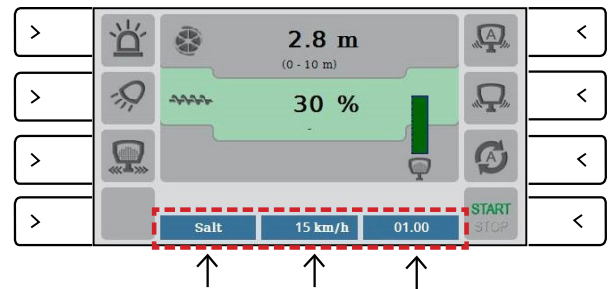
### Basic functions

**Example:** Activating a basic function when you have chosen the suitable mode (automatic or manual), the spreading-control screen will appear. Activate the beacon light or LED work light by pushing the selection button next to the lamp-symbol. The symbol will turn colored and stay that way as long as it's activated. Turning off the lamp, simply push the same button again.

The area in the bottom of the spreading mode screen shows selected spreading material, vehicle speed and current time.



*IceStriker automatic spreading mode*



*SprayStriker automatic spreading mode*

## Symbols

Activate/inactivate a function by pushing the selection button next to it. A grey symbol means that the function is inactive. An activated function is represented by a colored symbol.



This button will activate the optional LED-work light



This button will activate the optional beacon light.



When you're spreading in manual mode, push this button to change to automatic spreading mode.



By pushing this button, the machine will blast according to the blast settings.



Activate the vibrator while pushing and holding this button.

**NOTE:** If using HTrack this symbol is visible only when spreader is on.



*Optional:* Push this button to activate the optional electrical end nozzle (right).

**NOTE:** Directional control must be activated/checked under Settings → Machine → Model → Spreader configuration.



*Optional:* Push this button to activate the optional electrical end nozzle (left).

**NOTE:** Directional control must be activated/checked under Settings → Machine → Model → Spreader configuration.



Push this button to **start** your spreading session from the stop-mode



When spreading, push this button to **stop** the spreading session



When you're spreading in automatic mode, push this button to change to manual spreading mode.



Push this button to activate the optional pre-wet function.



This function will automatically make the unit vibrate according to a certain time interval. Go to: Main menu → Settings → Vibrator to set the time interval.

**NOTE:** If using HTrack this symbol is visible only when spreader is off.



Press this button to temporarily increase the spraying, or "blast". Adjust blast-settings under: Settings → Blast.

**NOTE:** If you use the optional electrical end nozzles and the directional control is activated/checked under Settings → Machine → Model → Spreader configuration this button turn on/off the middle spraybar nozzles.



*Optional:* Switch between main tank (1) and optional tank (2) by pushing this button.

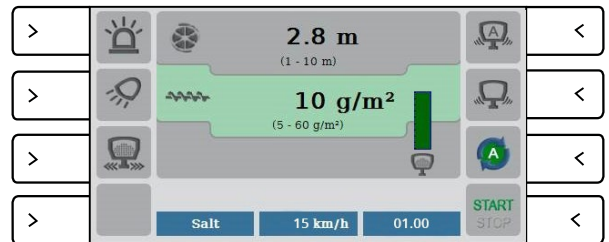
### Basic spreading function for IceStriker:

In automatic mode the distribution unit is defined by  $g/m^2$ , and in manual mode by percent (%) of auger max speed.

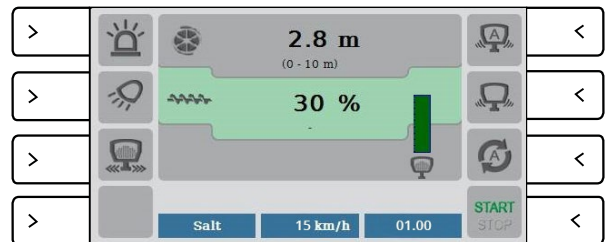
### Adjusting spreading width and amount of spreading material

Select Automatic or Manual mode from the main menu, make sure no liquid functions are selected/checked.

Browse between the two areas by pushing the round button. When you push the round button selected the area turns green. When the area is green you can increase or decrease the value by scrolling the round button. Push the round button again if you want to change the value in the other area.

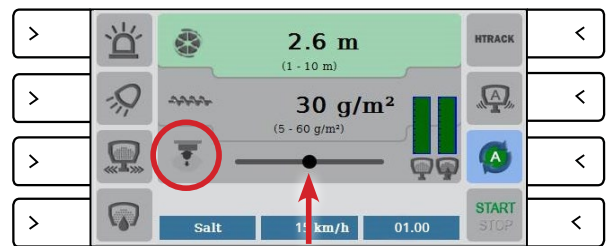


Automatic mode, IceStriker



Manual mode, IceStriker

If the spreader is equipped with the optional electric chute adjustment the icon on the left (marked with a red circle) shows in which position the chute is. Push the round button so the selected area turns green and scroll the round button to adjust the chute. When scrolling the round button the dot in the middle moves the chute to the right/ left.



Electrical chute adjustment

### Basic spreading function for SprayStriker:

In automatic mode the distribution unit is defined by  $ml/m^2$ , and in manual mode by  $l/min$ .

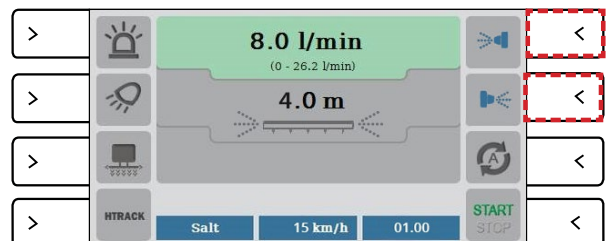
### Adjusting spray width and spray volume

Select Automatic or Manual mode from the main menu.

Adjust the spray width by activating the end nozzles (left and right) by pushing the button beside the icon. Adjust the spray volume by scrolling the round button.



Automatic mode, SparyStriker



Manual mode, SparyStriker

## Presets mode

Select Presets mode from the main menu.

Select one of the four presets by pushing the selection button next to number.



Presets mode

## Using the spraybar

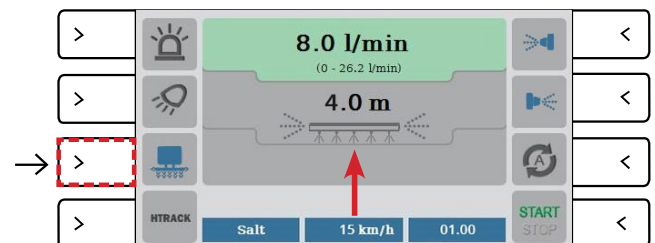
If you use an IceStriker spreader: Make sure that spraybar is activated/checked in the settings → machine settings → model → spreader configuration.

Select Automatic or Manual mode by pushing the selection next to the icon. If you use a SprayStriker you can select automatic or manual mode from the main menu. Increase or decrease the spray volume by scrolling the round button.

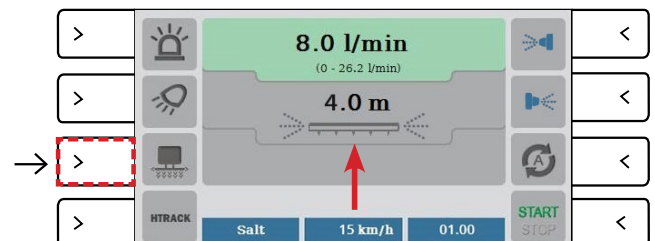
If you use the optional electrical end nozzles and “Directional Control” is checked/ activated in the settings → machine settings → model → spreader configuration you can turn on/off the middle spraybar nozzles by pushing the button beside the icon with a spraybar.



Spraybar (automatic mode)



The optional electrical end nozzles are activated and the middle spraybar nozzles are activated.



The optional electrical end nozzles are activated and the middle spraybar nozzles are not activated.

## Using the hand spray

Make sure that hand spray is activated/checked in the settings → machine settings → model → spreader configuration.

Select Hand spray from the main menu. Increase or decrease the spray volume by scrolling the round button.



Handspray

## OPTIONAL FUNCTION: HILLTIP HTRACK™

The Hilltip HTrack™ system is compatible with all models of IceStriker™, SprayStriker™ and SnowStriker™, via the controller. With the tracking software you can track and manage all of your spreading devices and snowplows online on your computer, tablet or smartphone.

Go to [www.htrack.net](http://www.htrack.net) to make a request for an account.

**NOTE!** More information about HTrack setup (controller settings and tracking) is found in the HTrack user guide.

## SOFTWARE UPDATE

Put the new software files on an USB-memory, and insert it in the USB-slot on the back of the controller. Turn on the controller and wait for about 5 minutes for the system to update. Restart the system after the update is completed.

Please ask your local dealer for the latest version of the software.

For users with HTrack or internet connection via modem or Wi-Fi it is possible to download and install the latest software directly from the controller. This option can be disabled in the HTrack portal (Vehicle settings → Equipment → Controllers). If the update from the controller is blocked users can't see the install button in the controller.

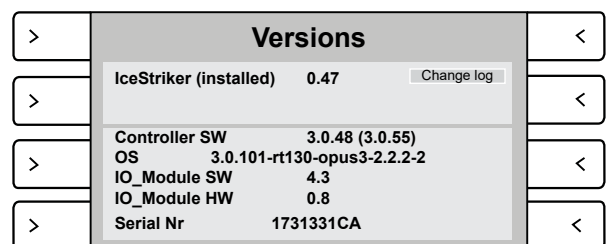
Go to *Main Menu* → *Info* → *About*.

Here users can see if the latest software version is installed and if a new version of IceStriker/ SprayStriker software is available. If a new version is available select "Install" by pushing the round button.

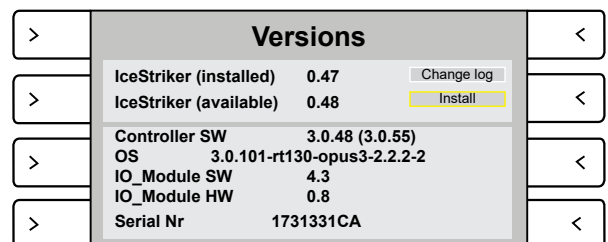
The software update is done in three steps:

1. Controller update: If a new software version is available select "Install" by pushing the round button.

2. Spreader module update: When the controller update is ready it is possible to update the spreader module. Select "Install" to update the spreader module.



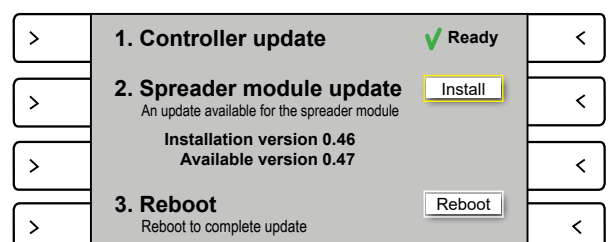
About view (Software update Not allowed)



About view (Software update Allowed)



Step 1. Controller update

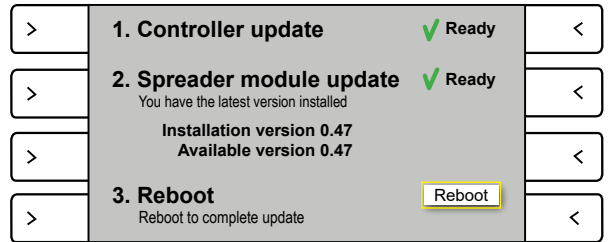


Step 2. Spreader module update

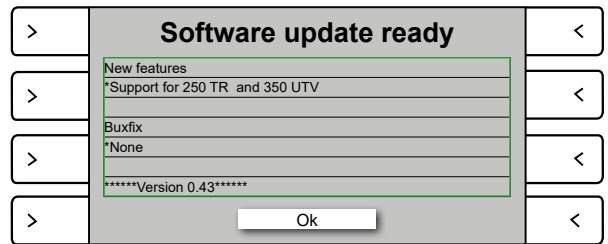
3. **Reboot:** When the controller and spreader module update is ready select “Reboot” to complete the update.

### Software update ready

This view is displayed after reboot. In the change log users can see software version updates, new features, bugfixes etc. Push the round button to select the change log and scroll the round button to scroll down and read the log.



Step 3. Reboot



Software update ready



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Construction, specifications and other details are subject to change without notice.