



EN

MANUAL K SERIES

ISOBUS



> ISOBUS MASTERDATA

BREDAL Type K

Serial number.....

A series of values are entered in the computer of each individual spreader. If a value is mistakenly deleted from the computer, it is possible to reenter the original value.

The following values must be entered in the computer in order for all functions to work properly:

Weighing:

Calibration figures

Zero load value

Application rate:

Volume per impulse

Speed sensor:

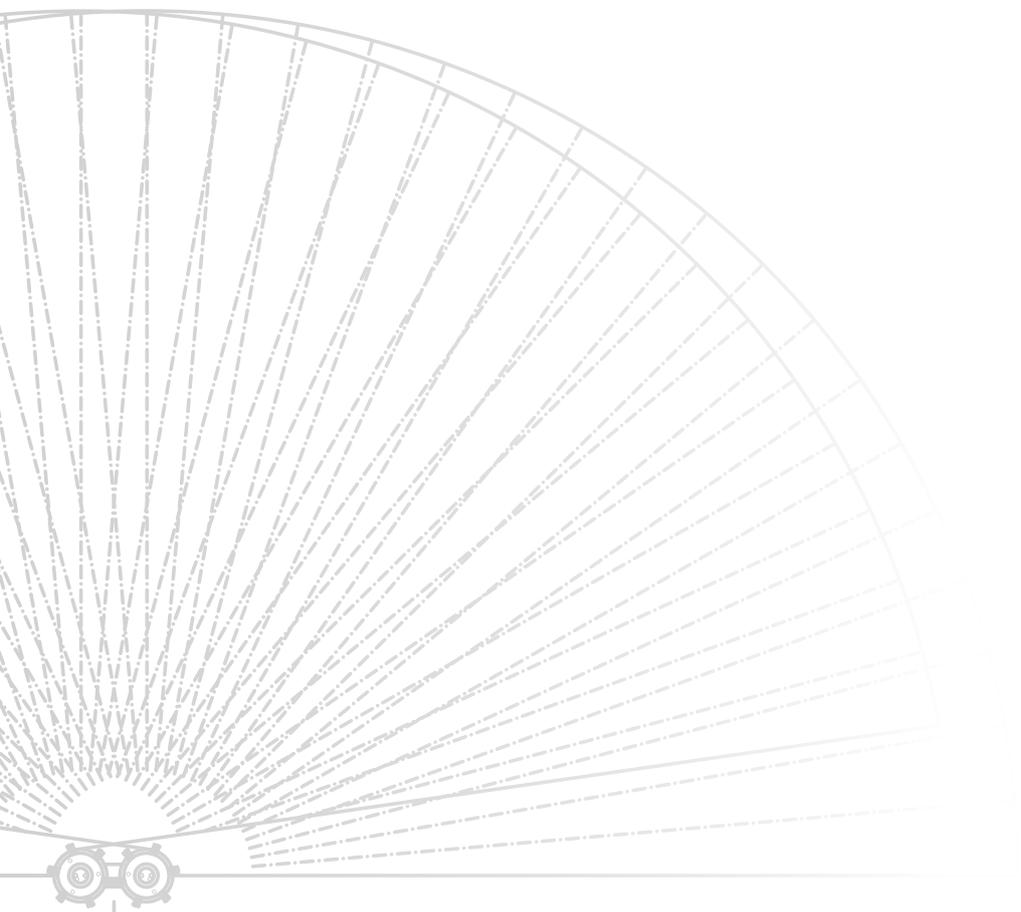
Pulses/100 metres

Errors and omissions excepted.

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These operating instructions contain instructions for operating the ISOBUS controls on Bredal K spreaders.

The controls can be operated either via an ISOBUS Müller terminal delivered together with the spreader or via the tractor's ISOBUS terminal.

The ISOBUS terminal in the tractor and its software:

The appearance of the user interface varies slightly from one ISOBUS terminal to another. This is because the terminals have different resolutions. Some spreader functions require specific software to be installed in the terminal. Wedge spreading is only possible if the terminal has a section-control program and a tracking program. If fertilizer is applied according to field and crop maps, the terminal must also contain software that can process these maps. When the spreader is connected to the tractor, the spreader's job computer exchanges data with the tractor's terminal and only those functions which are supported by the tractor's terminal will be active. If the terminal does not contain software for wedge spreading, the function cannot be used.

INITIAL INSTALLATION/ SET-UP OF A MÜLLER TERMINAL

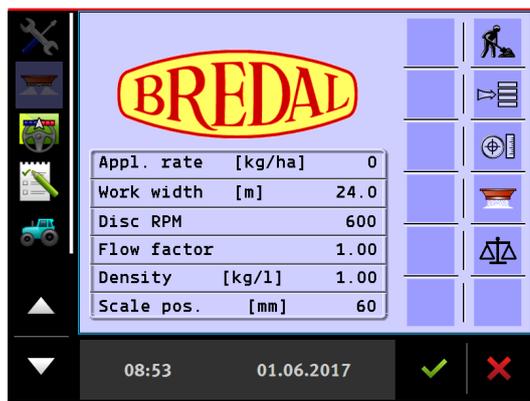
If an ISOBUS terminal from Müller is included with the machine, some basic set-up needs to be done before the spreader's section control can be used.

For installing the tractor mounting set and a GPS aerial, refer to the enclosed instructions from Müller. Also, please refer to Müller's instructions for operating programs that do not concern spreader operation, such as TRACK-Leader, FieldNav, farmpilot, or other software that can be connected to the Müller terminal.

The basic GPS receiver set-up, its activation, and the basic encoding of the GPS aerial's location can also be found in Müller's installation and operating instructions.

The spreader can be operated once the terminal, tractor-attachment set and GPS aerial have been installed, and the plug from the spreader's ISOBUS socket is connected, and basic encoding is completed. Press the  button for about 3 seconds. When the terminal starts up, the spreader's program loads automatically. It can take up to two minutes after switching on the terminal for the spreader icon to appear on the screen.

If the screen display does not appear, press  on the left side of the screen.

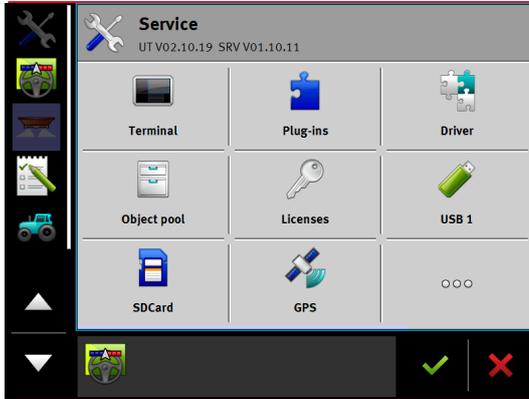


It is now possible to choose from among the various applications on the left side of the screen. The spreader's application is selected on the screen display shown here. It is always possible to return to this page by pressing the "Home" icon , except when an input field is active.

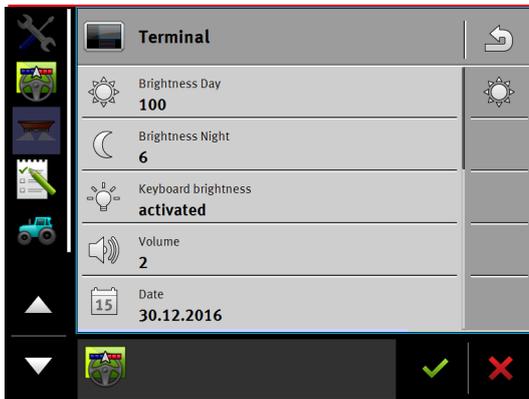
The "HOME" start-up screen shows the application rate, working width, etc.

LANGUAGE, CONTRAST, BRIGHTNESS AND UNITS OF MEASUREMENT

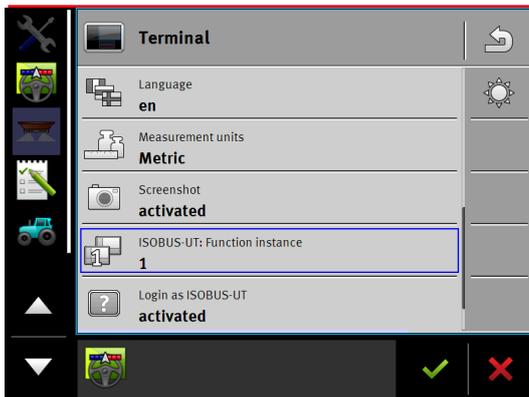
Press  to modify the settings:



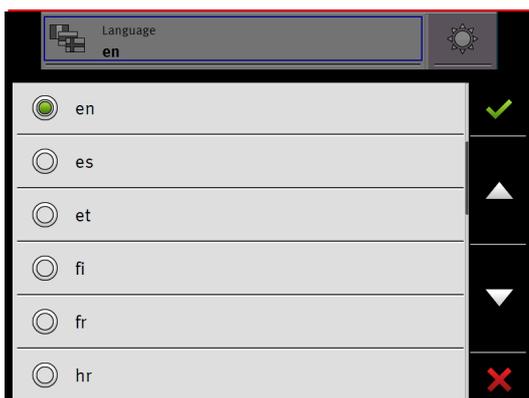
Press "Terminal".



Scroll down to select "Language".



Click the "Language" tab.



Select from the list

Press 

INITIAL SET-UP OF EXISTING TERMINAL IN THE TRACTOR

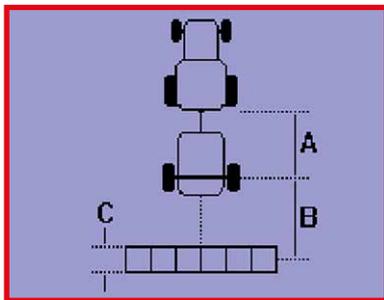
If the spreader is connected to a tractor with an ISOBUS terminal, it may be necessary to enter the sections' location and length and indicate that a tractor mounted spreader is used. The input data is used to ensure that the spreader starts and stops applying fertilizer at the right time when turning in headland. The Bredal program already contains this information, but not all tractor terminals upload the information from the spreader when it is connected. Some terminals use the input data correctly. In some instances, the tractor's terminal uses only one of the two input distances. Sometimes, the tractor's terminal does not upload the distances at all; in these cases, the distances must be entered in the tractor terminal's section control program. Follow the instructions from the manufacturer of the tractor's terminal.

In order for the spreader to start and stop applying fertilizer at the right time, the following distances need to be entered:

- A = distance from the tractor hitch to the spreader axle
- B = distance from the spreader axle to the center of the spreading pattern
- C = length of the spreading pattern

If a GPS aerial is mounted on the tractor, the following distances are recommended.

On most terminals, "Tractor drawbar" must also be selected.



FERTILIZER:

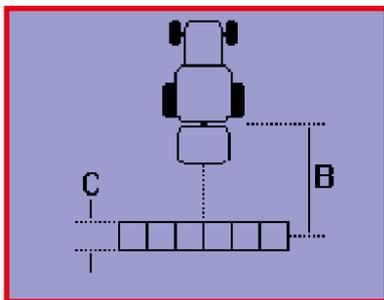
- A = 4.0 meters (6.0 meters with bogie)
- B = 8.0 meters
- C = 5.0 meters

LIME:

- A = 4.0 meters (6.0 meters with bogie)
- B = 5.0 meters
- C = 4.0 meters

If a GPS aerial is mounted on the front of the tractor, select "three-point hitch" and the following distances instead.

In this case, B = the distance from the tractor hitch to the middle of the spreading pattern.



FERTILIZER:

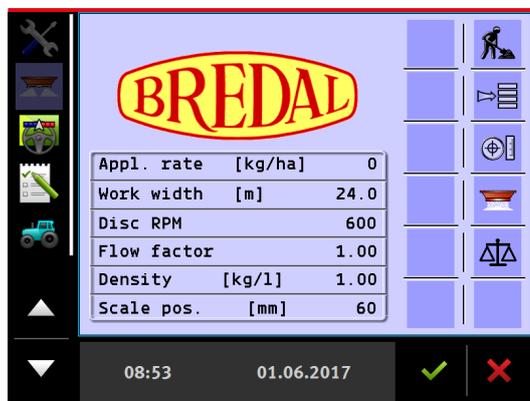
- B = 12.0 meters (14.0 meters with bogie)
- C = 5.0 meters

LIME:

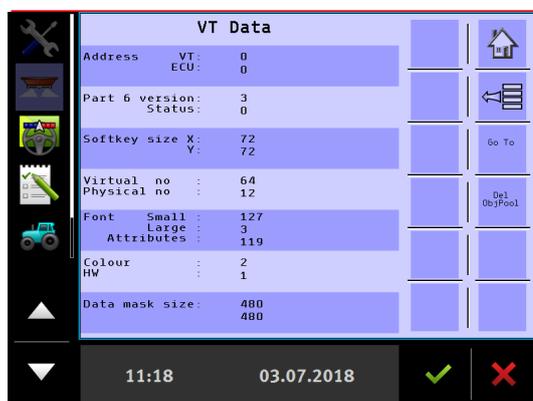
- B = 9.0 meters (11.0 meters with bogie)
- C = 4.0 meters

SWITCHING A SCREEN DISPLAY TO ANOTHER TERMINAL

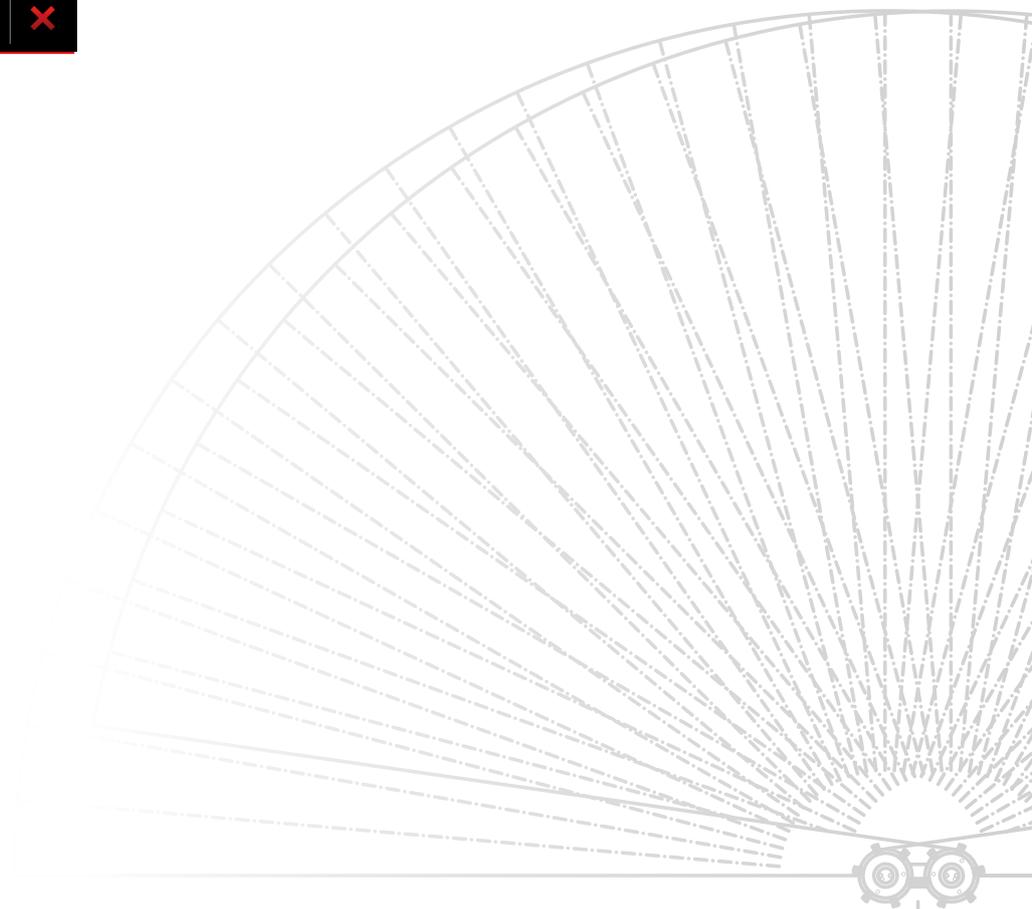
If more than one terminal is connected to the tractor's ISOBUS system, the Bredal program display can be moved from one terminal to the other.



Press "Menu" , then select "Help", followed by "Diagnostic" and then "VT".



Press "Go to" on the right side.



DESCRIPTION OF THE BREDAL PROGRAM ICONS

The following sections describe the Bredal program icons; their location on the screen can vary from one terminal to another.
Icon meaning/function:



Home: return to start page.



Work: go to operating page.



Start/stop button: starts and stops the application process.



Menu: go to the menu selected.



Return: go back to the previous menu.



Line down: moves the marking one line down.



Line up: moves the marking one line up.



Emptying: starts the floor belt, emptying the hopper.



Enter application data: goes to the menu where application rate, working width, etc., are entered.



Weighing control: goes to the menu for checking the application rate.



Accept: accepts the input data, or acknowledges an alarm.



Delete: cancels input data.



Toggles between different displays.



Increase the spreading volume by 10 %.



Reduce the spreading volume by 10 %.



Return to the originally entered spreading volume.



Warning/Alarm



Next page: goes to the next page.



Delete: deletes entered data.



ESC: returns without changing a value.



Calibrate:



Use new flow factor



Enter volume for filling



Enter volume after finishing spreading



Start new calculation



Pre-start function



Operate the hydraulic system



Start/stop hydraulic spreading discs

CONFIGURABLE ALARMS

It is possible to set up individual alarms to issue a warning, such as when the hopper is almost empty. The following alarms are configurable:

- Kg/residual in the hopper
- PTO speed
- CAN speed timeout time

Press the  button on the Home screen display.



Select "Machine"



Select "Alarm configurations"

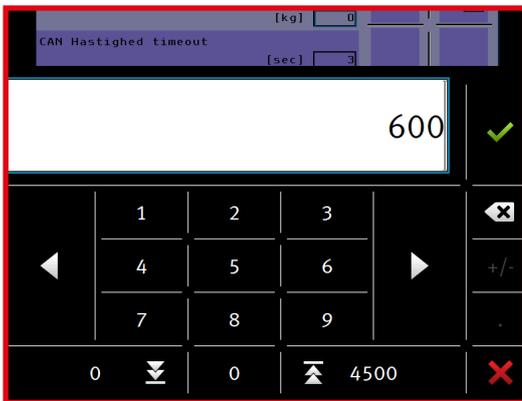


Select the alarm to be activated



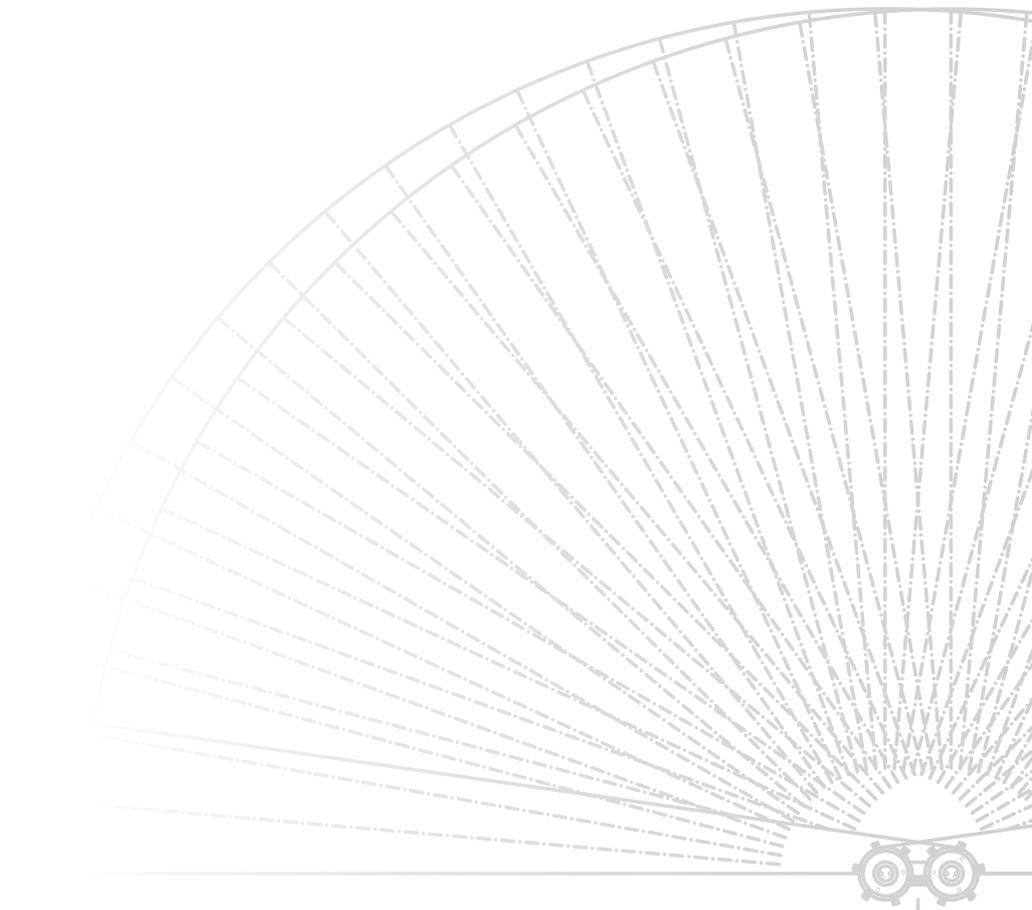
In this example, the alarm is set for kg/residual to be on.

Press  to accept.



In the field below, enter the residual volume (kg/residual) that will trigger the alarm.

Press  to accept.

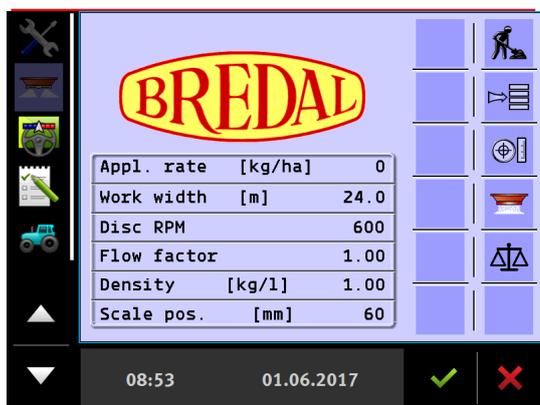


MENU FOR ENTERING THE APPLICATION RATE, WORKING WIDTH, DENSITY, ETC.

The following parameters must be encoded before application begins:

- Kg/ha
- Working width
- Scale position, rear doors
- Density
- Flow factor
- Disc rpm (hydraulic spread discs)

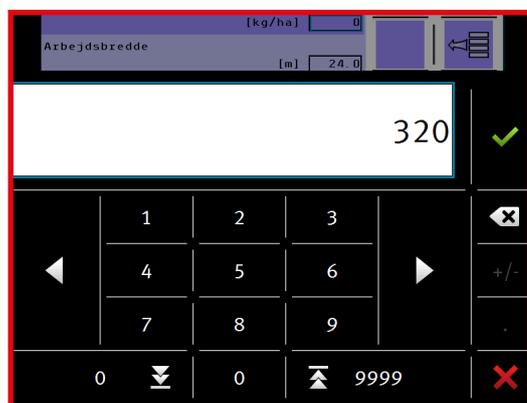
> ENTERING THE APPLICATION RATE



Press  to access the task menu.



Press the input field "kg/ha" to change the value.



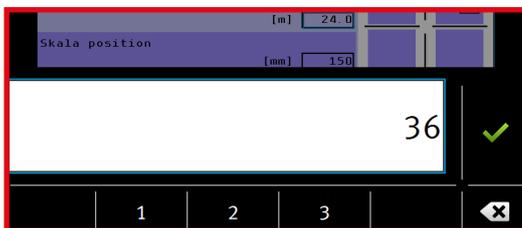
Enter the preferred application rate.

Finish with 

> ENTERING THE WORKING WIDTH



Press the input field "Working width" to change the value.



Enter the preferred working width.

Finish with 

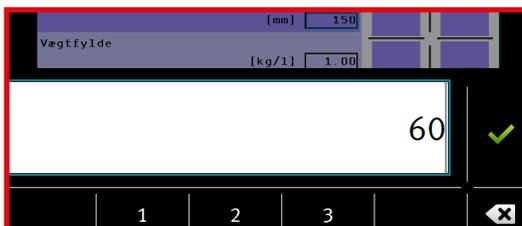
> ENTERING SCALE POSITION

The setting for the opening of the rear door is entered under scale position. It is advisable to operate at a scale setting of 40–70 for fertilizer and 150–300 for lime, depending on the amount to be spread.

NB: it is important to enter the value of the actual rear-door setting, as otherwise the spreader will spread incorrectly.



Press the input field "Scale position" to change the value.



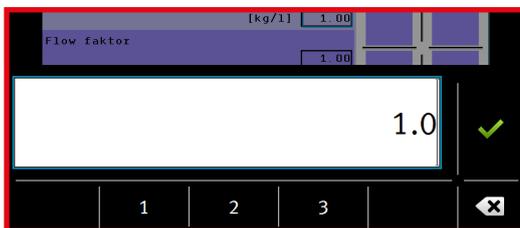
Enter the position of the rear door.

Finish with 

> ENTERING DENSITY



Press the input field "Density" to change the value.



Enter the fertilizer's bulk density.

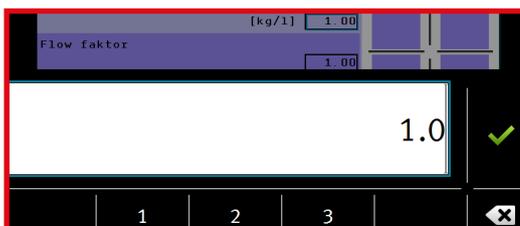
Finish with 

> ENTERING THE FLOW FACTOR

As a rule of thumb, always start out with a flow factor of 1.0. If the spreader is equipped with weight cells, the flow factor will be continuously calculated during spreading; the most recently calculated flow factor is shown in the input field under flow factor.



Press the input field "Flow factor" to change the value.



Enter the preferred flow factor.

Finish with 

> ENTERING THE DISC RPM (HYDRAULIC SPREAD DISCS ONLY)



Job parameters	
Application rate	[kg/ha] 320
Working width	[m] 36.0
Scale position	[mm] 60
Density	[kg/l] 1.00
Flow factor	1.00
Disc RPM	[RPM] 1000

Standard Vehicle
Speed --- km/h
Applied distance 0.00 km
Working time 0.00 h

When the implement has hydraulic spread discs, the preferred rpm for field and headland spreading can be entered.

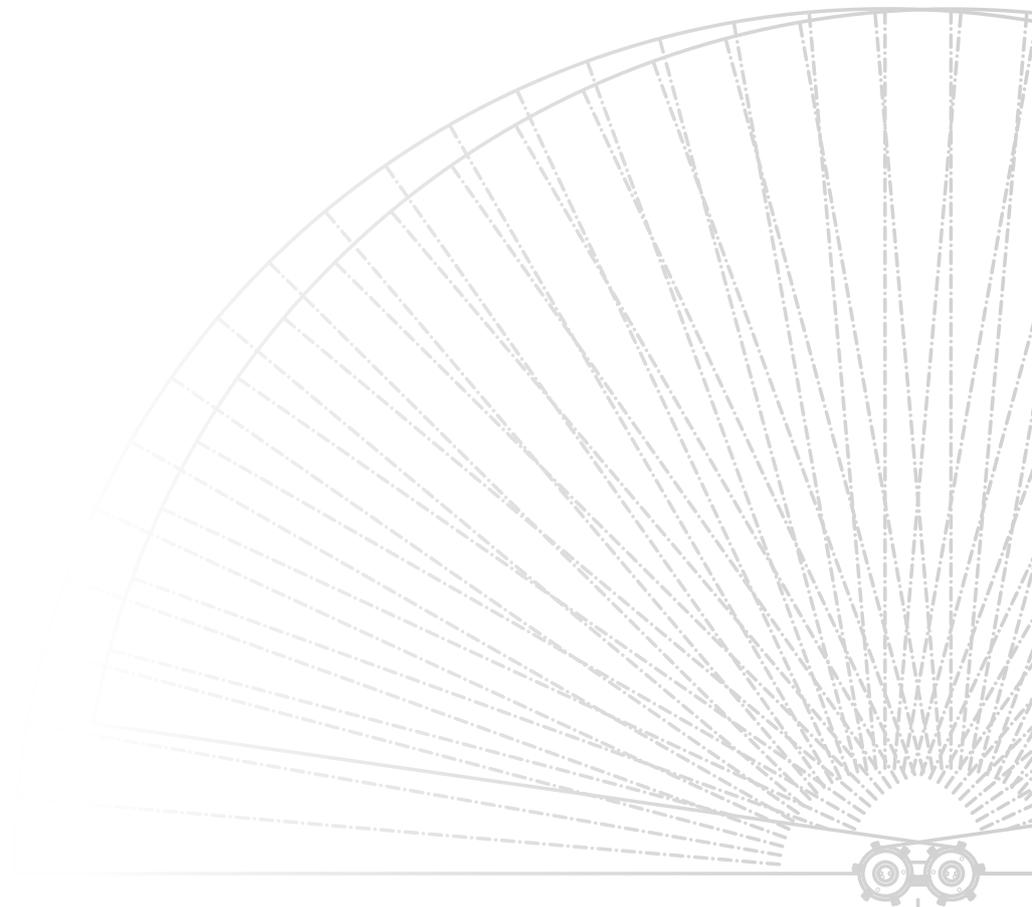
Click the field **"Disc RPM"** to change the rpm for field spreading.

Press the field **"Disc headland (border side)"** and **"Disc headland (field side)"** on the next page to change the rpm for headland spreading.



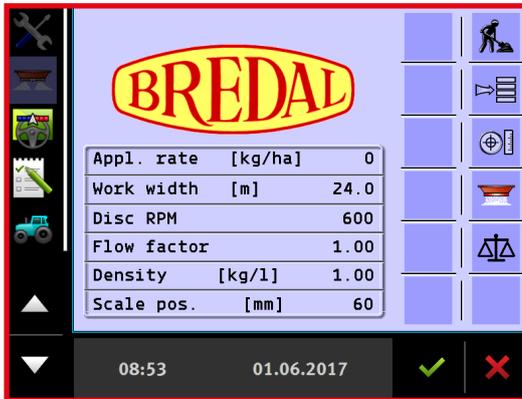
Job parameters	
Disc-headland (border-side)	[RPM] 700
Disc headland (field-side)	[RPM] 900

Standard Vehicle
Speed --- km/h
Applied distance 0.00 km
Working time 0.00 h

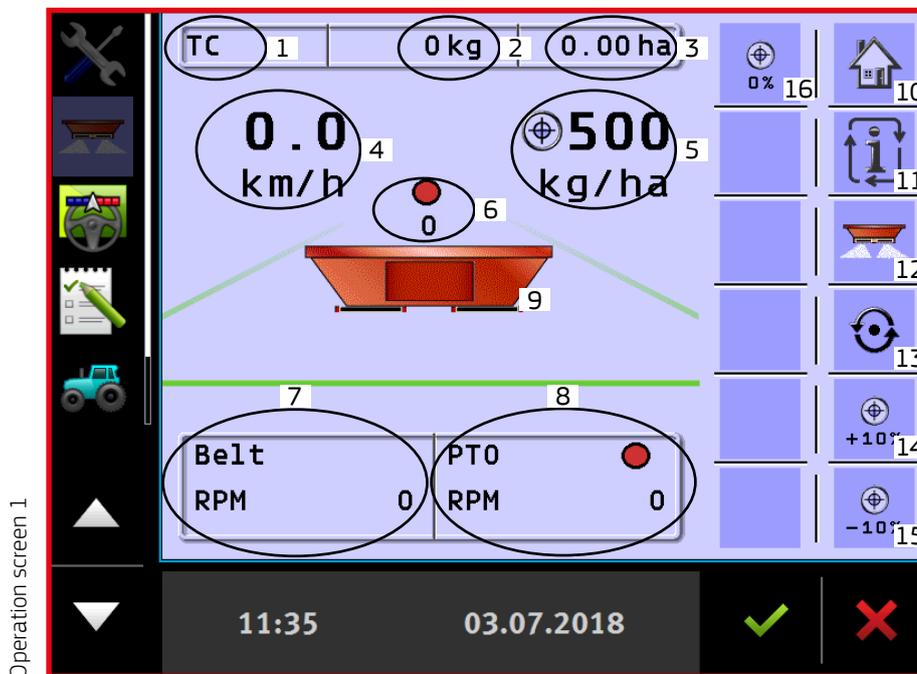


OPERATION SCREEN

The operation screen is the screen display shown during spreading. It is also where application can be started and stopped and where different messages are given to the driver.



Press  to access the operation screen.



1. Task controller: when TC is displayed, the task controller program is active
2. Indicates the number of kg spread as counted by the active counter.
3. Shows the number of ha processed as counted by the active counter.
4. Shows km/h, kg/min., kg/ha and belt speed and flow factor. The red dot by the flow factor indicates whether the weighing signal is sufficiently stable for dynamic weighing to be able use the signal for calculation: green = the signal is stable; red = the signal is insufficiently stable for dynamic weighing to use the calculation. It is possible to scroll through the views by pressing button no. 11.
5. Shows the currently preferred application rate
6. Shows the actual weight in the hopper.
7. Shows the current floor belt speed for left and right sides.
8. Shows the current PTO rpm; the dot indicates whether the spreader is operating at the correct PTO rpm:

For field spreading:

Green = operating at the correct PTO rpm

Yellow = PTO rpm is close to being correct

Red = operating at an incorrect PTO rpm

When headland spreading is activated:

Green = Environment: no or very little fertilizer is being spread beyond the field boundary.

Yellow = Medium: 40–50% being spread in the field boundary; fertilizer is also being spread beyond the field boundary.

Red = Maximum: full application rate all the way out to the field boundary, and a good deal of fertilizer is being thrown beyond the field boundary.

NB: if, as recommended, settings have been downloaded from Bredal's website, use the PTO rpm setting from here and not the above color markings.

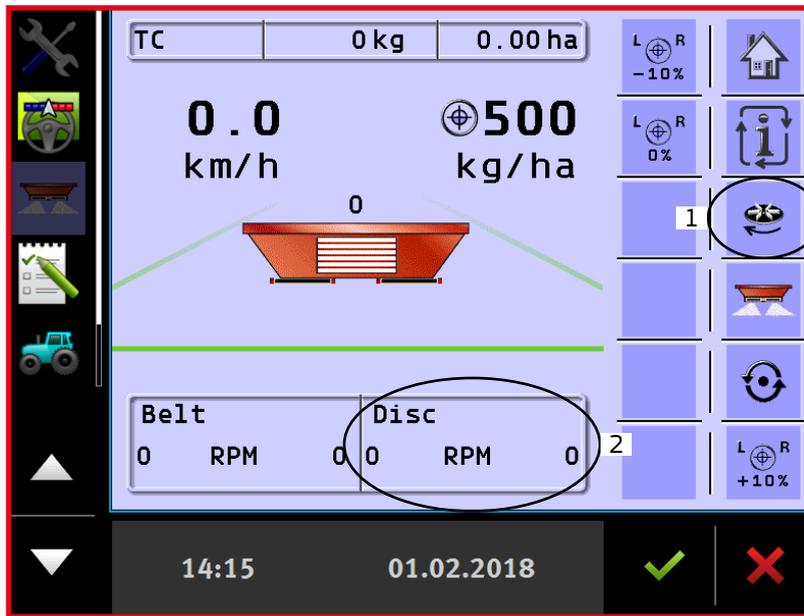
9. Starts and stops the spreading. Oil must be circulating to the belts before spreading starts. Key no. 12 has the same function.
10. Home key
11. Toggles different views on the screen (see also point 4).
12. Starts and stops the spreading. Oil must be circulating to the belts before spreading starts.
13. Starts manual application until it is pressed again or until forward movement is detected and the application becomes driving dependent.
Note! Section control must be switched off (manually) before this function can be activated.
14. Increases the spreading volume by 10%
15. Reduces the spreading volume by 10%
16. Return to the input application volume.



1. Symbol for headland spreading; the symbol appears when headland spreading is activated
2. The application rate is reduced by 10% using key 15.
3. Shows the current application rate in kg/ha (in the example, the application rate is reduced by 10% compared to the entered value)

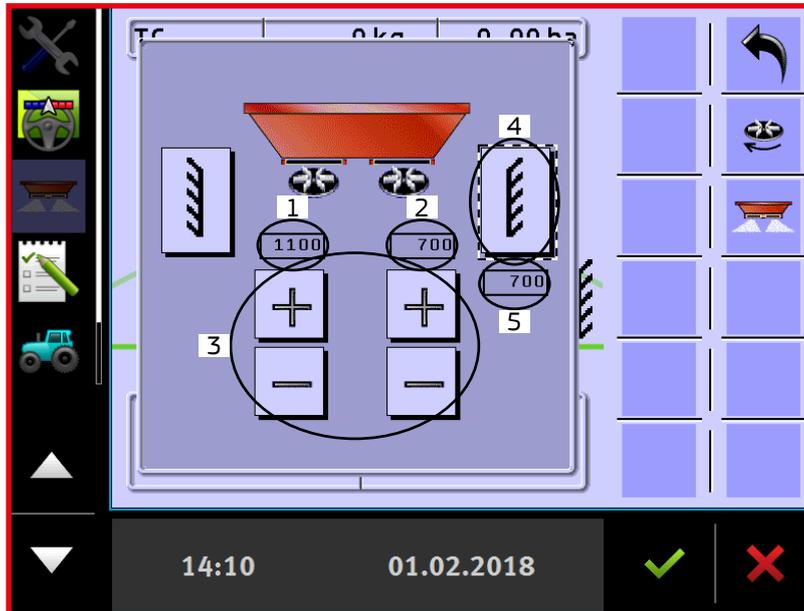
OPERATION SCREEN (HYDRAULIC SPREADING DISCS)

In addition to the functions described on the preceding pages, the following functions for hydraulic spreading discs are found:



1. Starts and stops the spreading discs.
2. Shows the current disc speed for the right and left side.

By pressing field "2", the following picture appears:



1. Shows the current speed set for the left disc.
2. Shows the current speed set for the right disc.
3. The speed of each disc can be changed using the "+" or "-" key. Alternatively, the preferred speed can be entered by pressing "1" or "2".
4. Toggles between field spreading and headland spreading on the side concerned.
5. Shows the headland spreading speed when headland spreading is activated.

ENTERING THE DESIRED SPEEDS FOR FIELD AND HEADLAND SPREADING

Field spreading: Enter the preferred speed in "1" and "2" when field spreading is selected.

Headland spreading: Enter the preferred speed for field and headland spreading respectively in "1" and "2" when headland spreading is activated.

Alternatively, the speeds can be entered under "Job parameters" (see p. 17).

USER SET-UP OF THE OPERATION SCREEN

This menu makes it possible to adapt the operation screen to each user. The following can be changed:

- Preferred screen (if the tractor has more than one terminal)
- Manual operation of sections (icons for the operating of sections will become visible on the operation screen)
- Option of using the large spreader symbol in the operation screen for starting/stopping.

Press the  key on the Home screen display.

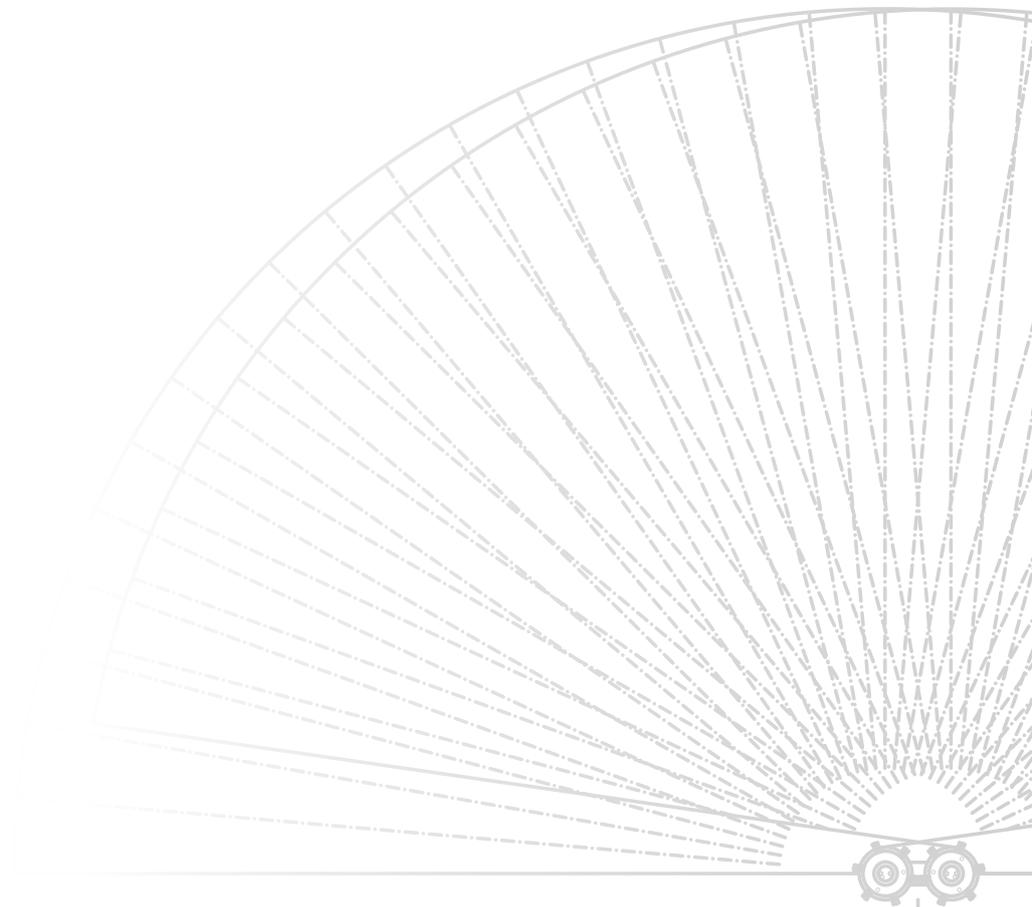
Select "User interface".



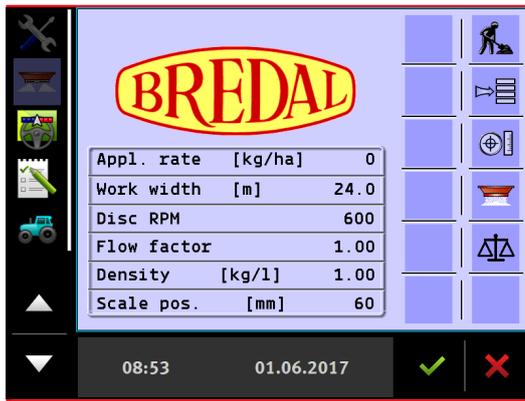
Press the "On/Off" field to connect or disconnect the preferred function.

Finish with 

The changes will not be implemented until the terminal has been restarted.



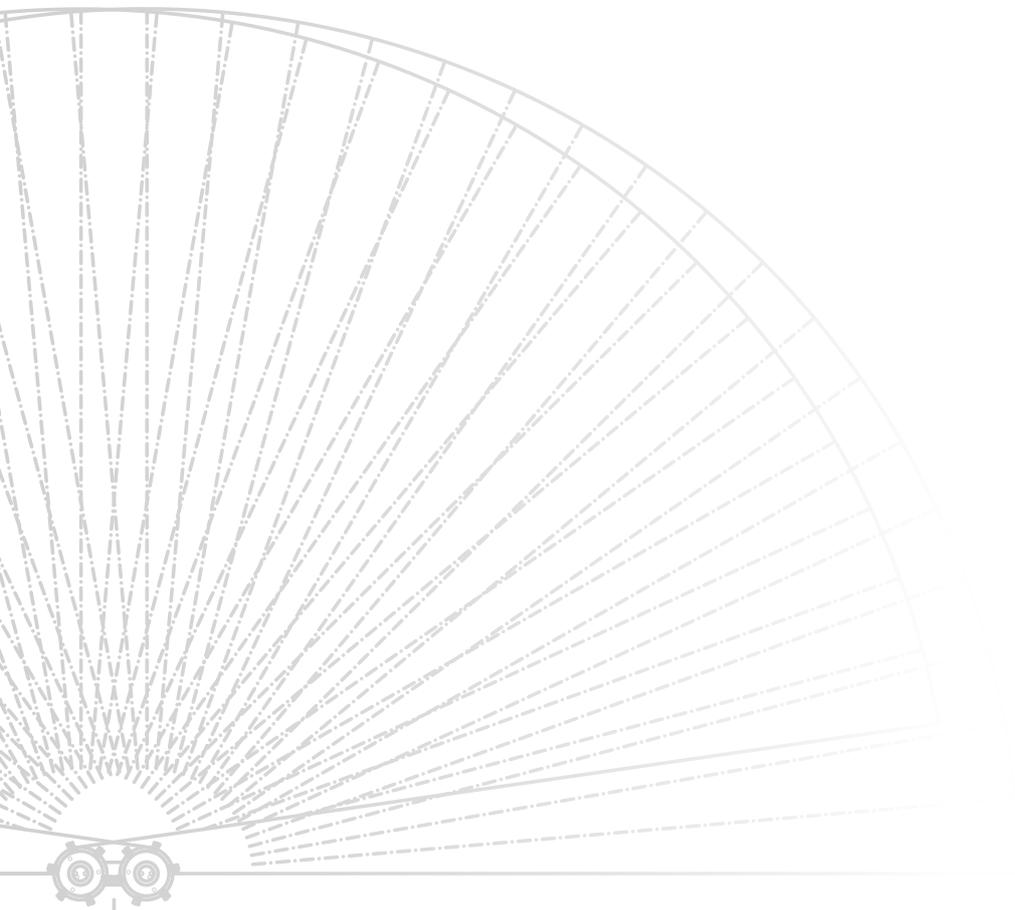
FAST EMPTYING



Press  on the Home menu.



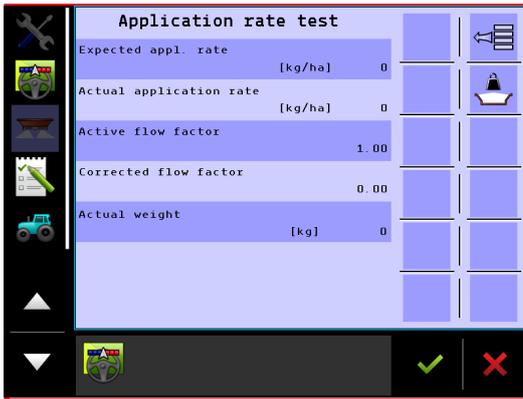
Press  to start emptying. It is possible to change the floor belts' speed by pressing the rpm and entering a different value.



> SPREADER WITH WEIGHT CELLS

Press the  symbol on the Home menu.

On this menu, it is possible to compare the application rate entered with the actual application rate. When dynamic weighing has been activated, a new flow factor is continuously and automatically calculated. Dynamic weighing is activated when the implement is delivered from the factory, but it can be deactivated if preferred. If dynamic weighing has been deactivated, weighing can still be used, but the flow factor will not be automatically calculated or changed.



The active flow factor appears, and the next adjustment of the flow factor (adjusted flow factor) can be read.

When the spreader is filled, this is automatically registered and a new calculation begins.

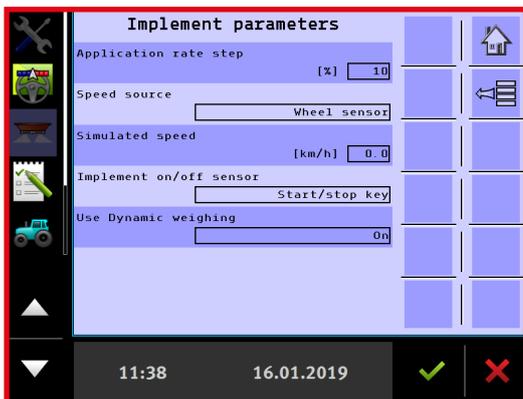
By pressing  it is also possible to start a new calculation. This is used, for instance, when starting on a new task with a different application rate.

Activating/deactivating dynamic weighing:

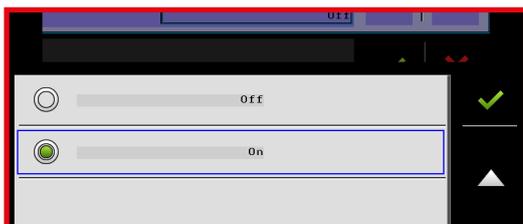
Press the  key on the Home screen display.

Press "Machine"

Press "Implement parameters"



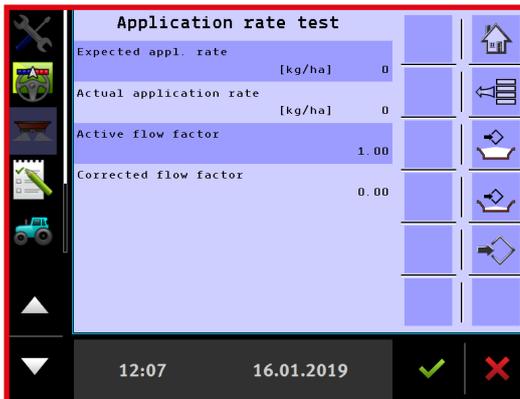
Press the field "Use dynamic weighing" to activate or deactivate the function.



Select whether dynamic weighing should be activated or deactivated.

Finish with 

> SPREADER WITHOUT WEIGHT CELLS



Pour a known weight into the spreader.

Press the  symbol on the Home menu.

Press , enter the filled amount and press .

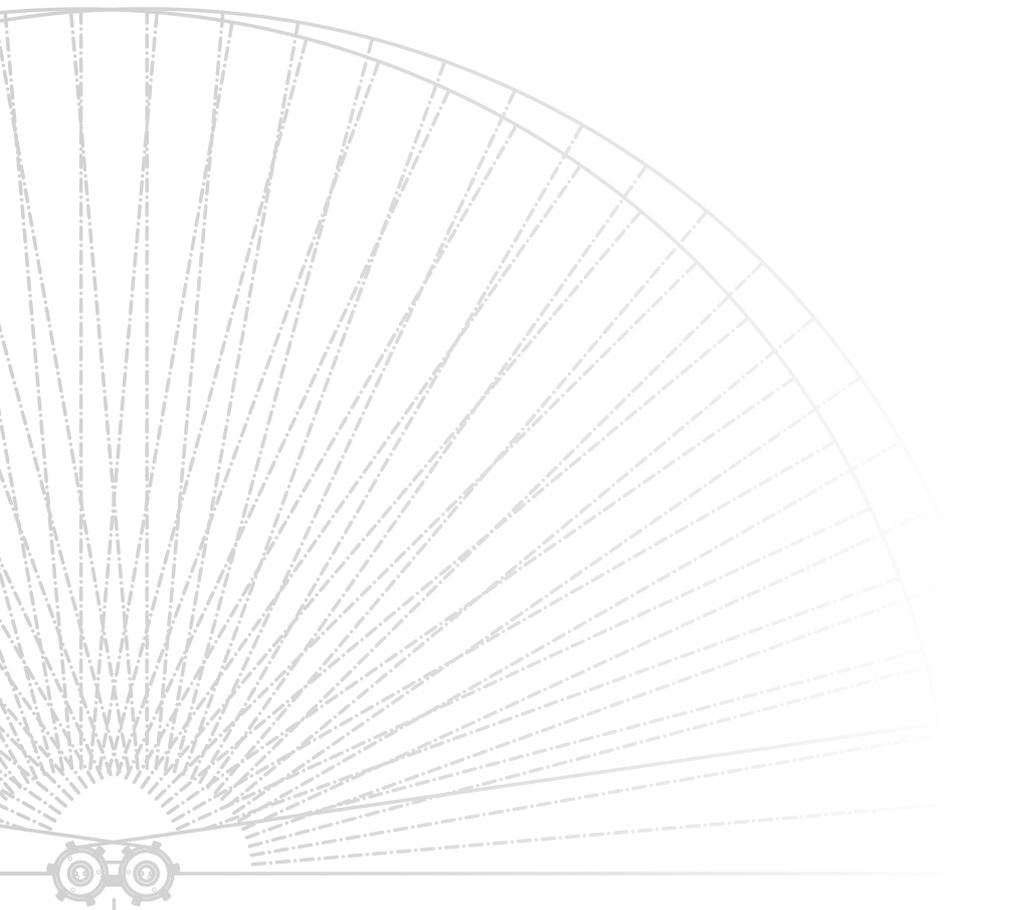
After spreading, press the  symbol in the HOME menu.

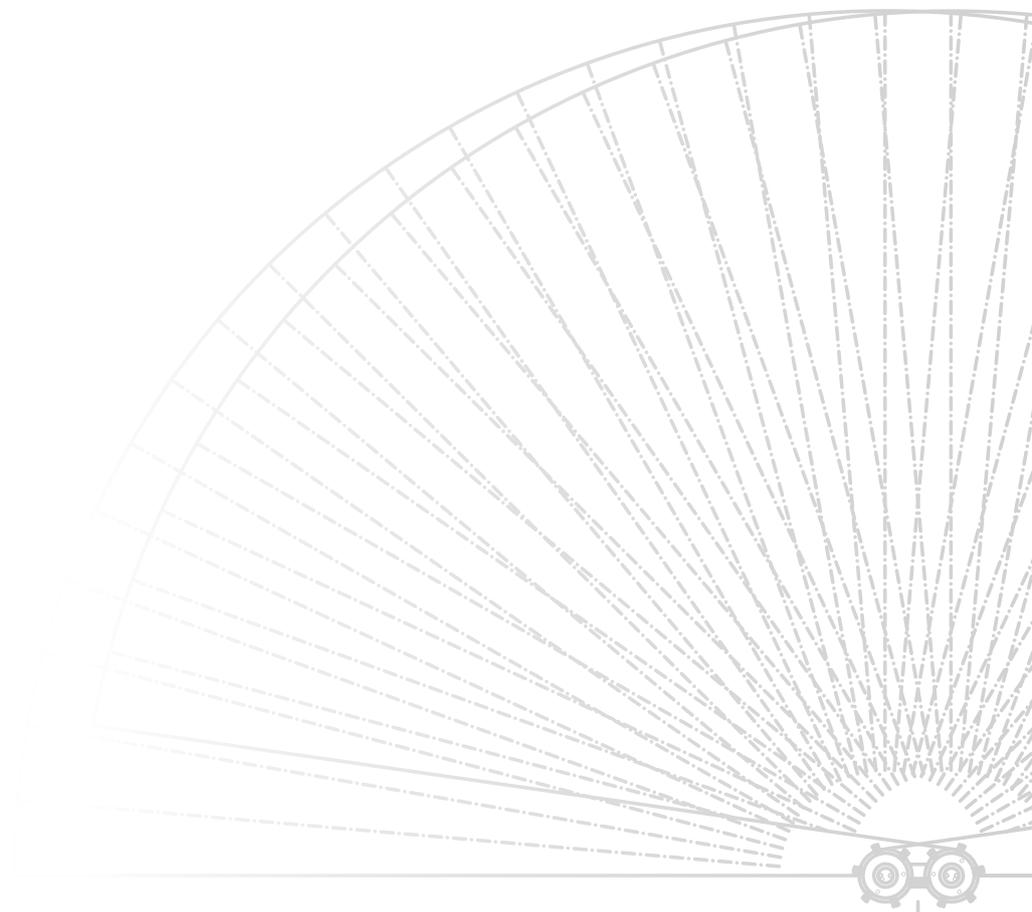
Press , enter the amount left in the spreader and press .

Press  to apply the new flow factor.

By pressing  in the HOME menu, the actual weight in the spreader can be entered at each filling.

This makes it possible for the operation screen to show the theoretical weight in the spreader at all times during spreading.





COUNTERS

This Bredal program component has 10 trip counters and these can be used to count a task's area, distance, volume and time. If the tractor's terminal has an active task controller, this will be used to count area, volume, etc. The 10 trip counters in the Bredal program component will be deactivated and only the trip counter TC will appear on the menu under counters. The active counter will also appear at the top of the operation screen.

Press the  key on the Home screen display.

Press "Counters"

Select "Trip"



If "only local counters" is selected, it is possible to select from 10 different trip counters in the trip counter menu.

Press "Active trip counter" to select a different counter.

Enter which counter should be activated; it is possible to select counters 1 to 10.

Finish with 

Press  to delete the values counted by the active trip counter.



If "ISOBUS TC counter" is selected, the task controller on the tractor's terminal is active and it is not possible to select other counters. The values counted from TC are shown in the counter, and these values can only be saved or deleted via the TC program.



The active trip counter is shown at the top of the operation screen, and the counted kg and the counted area are shown.



If "TC" appears, the tractor terminal's task controller is active, and the counted values that appear come from here.



It is also possible to choose between "Trip" and "Total" on the counter menu.

SETTING UP IMPLEMENT PARAMETERS

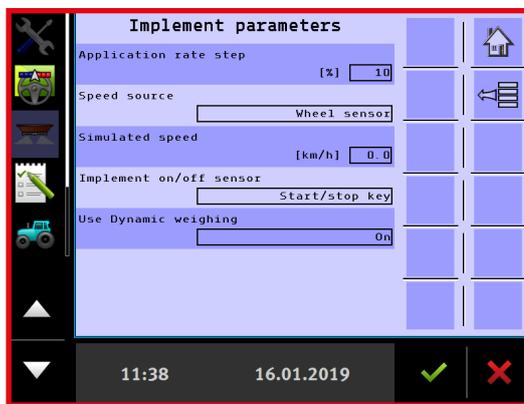
On the implement parameter menu, it is possible to change the following parameters:

- Application rate step: Step size,%
- Speed source
- Simulated speed
- Implement on/off sensor: Choose between the on-screen start/stop button or an external button.
- Use dynamic weighing: Activating and deactivating dynamic weighing

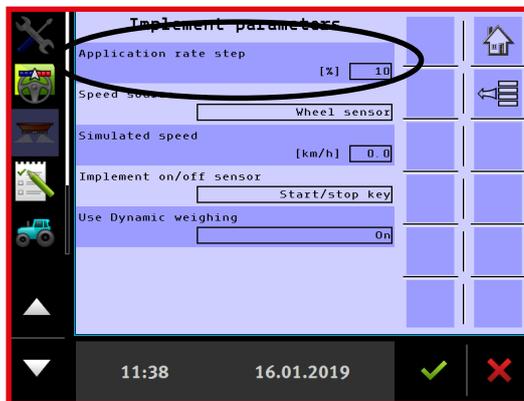
Press the  key on the Home screen display.

Select "Machine"

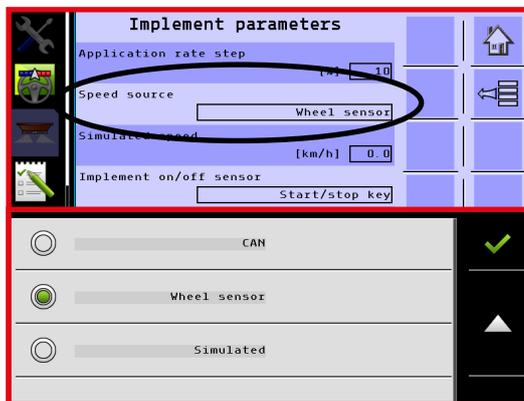
Select "Implement parameters"



Implement parameter menu: On this menu, it is possible to change the various parameters (see an explanation of each individual parameter below).



Application rate step: It is possible to enter the preferred step rate for each keystroke on the operation screen here.

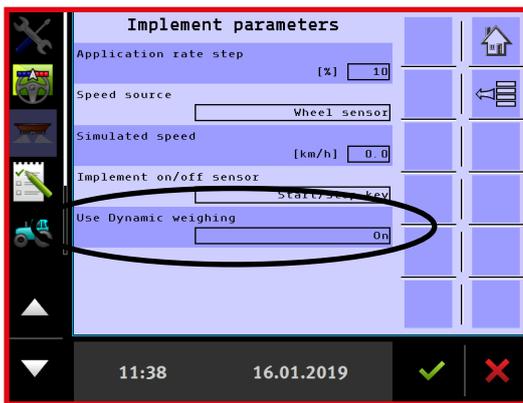


Speed source: It is possible to choose from among Wheel sensor, CAN or Simulated.

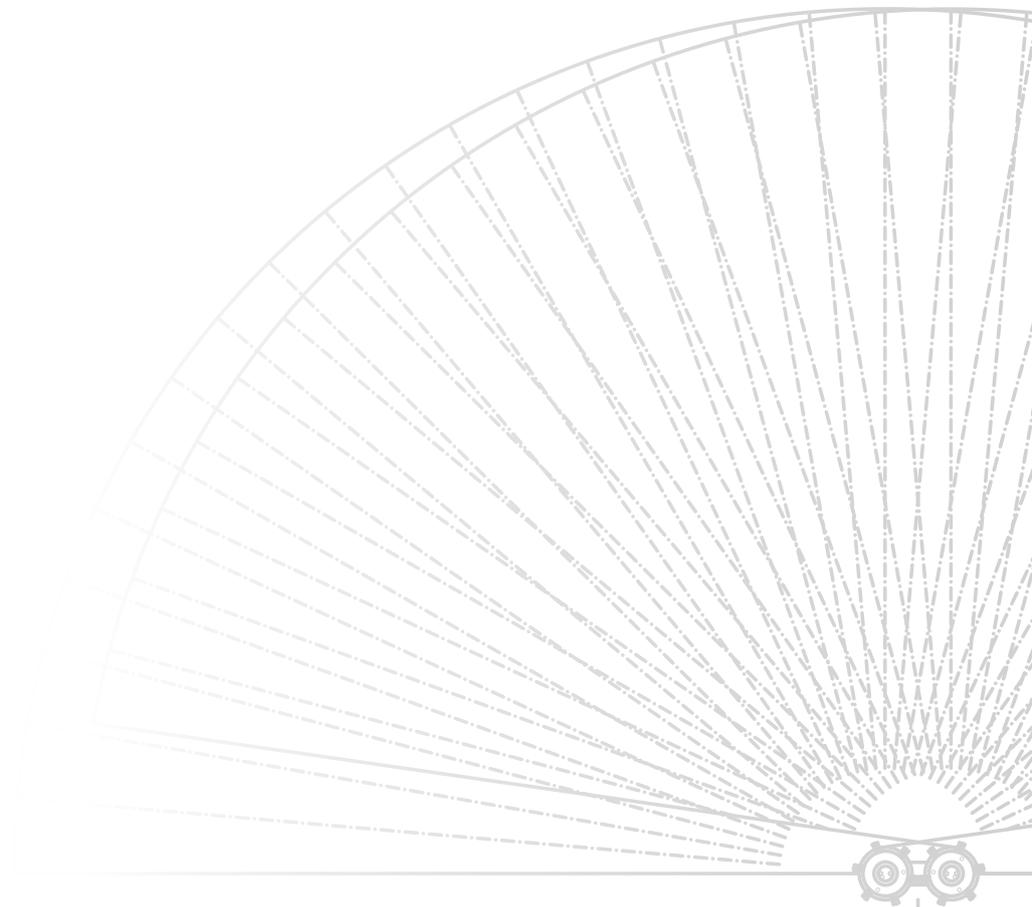
Wheel sensor: The forward speed is sent provided by a sensor mounted on the spreader's wheel.

CAN: The forward speed is provided by the tractor's terminal (GPS speed, tractor wheel sensor, etc.). Must be selected and calibrated in the terminal's basic set-up.

If "Simulated" is selected, the simulated speed must be entered in the "Simulated speed" field.



Use dynamic weighing: Here, it is possible to activate and deactivate dynamic weighing (see also p. 17).



CALIBRATIONS

A few basic settings must be entered on the calibrations menu in order for the spreader to function correctly. All figures have already been entered from the factory, but it may be necessary in a few instances to change some of the entered settings slightly. The following data/calibrations can be entered on the menu:

- Hydraulic calibration
- Hydraulic system, spread discs
- Calibration of implement speed sensor
- Calibrating/Zeroing weight cells
- TC offsets

Press the  key on the Home screen display.

Select “Machine” and then “Calibrations”

> HYDRAULIC CALIBRATION

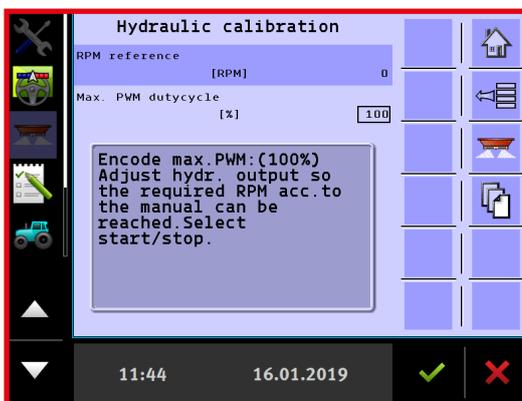
To determine the correct flow of oil from the tractor, a flow test of the tractor’s oil volume can be done during the hydraulic calibration to prevent excess oil being sent to the spreader.



Make sure that no one is near the spreader when the calibration begins!



Select “Hydraulic calibration” to go to the calibration menu.



Enter 100% in the “Max. PWM duty cycle”.

Press the start key 

The tractor’s engine must be running at operating rpm and the oil must be at operating temperature.

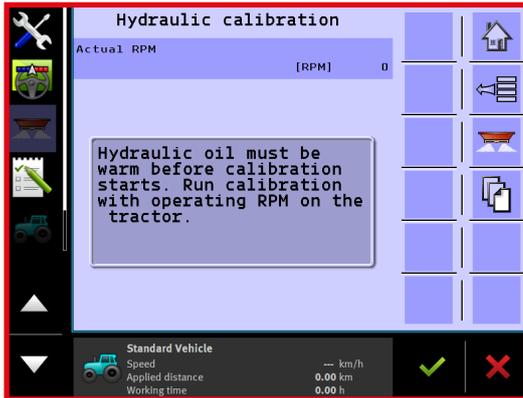
When the tractor’s oil outlet is opened, the floor belts will start running; set the tractor’s oil flow volume so the floor belts can run at approximately 600 rpm for K45–105 and approximately 400 rpm for K135–165. Do not set a higher oil flow volume than necessary.

The spreader's hydraulic system is calibrated from the factory and under normal conditions does not need to be recalibrated. Only if problems arise with the following:

- the belts are slow in starting and reaching the correct application rate when the spreader starts
- if the belt will not stop
- if the belt runs unevenly

In these instances, it is possible to recalibrate the hydraulic system.

Press  to go to page 2 under hydraulic calibration.



When the calibration begins, the tractor's hydraulic oil must be circulating.

The tractor's engine must be running at operating rpm and the oil must be at operating temperature.

Press the start button  to start the calibration. The spreader belt begins to run up to the highest speed, then slowly reduce the belt speed until the calibration is completed.

> HYDRAULIC SYSTEM: SPREAD DISCS

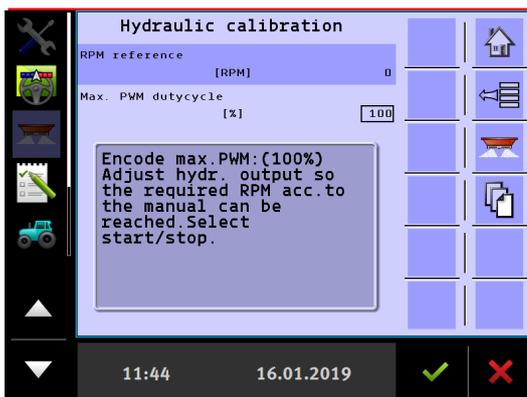
On spreaders with hydraulic spread discs (oil supply from two outlets on the tractor), the correct oil flow from the tractor is found by carrying out a flow test on the discs.



Make sure that no one is near the spreader when the calibration begins!



Select "Hydraulic system – disc".



Enter 100% in the "Max. PWM duty cycle".

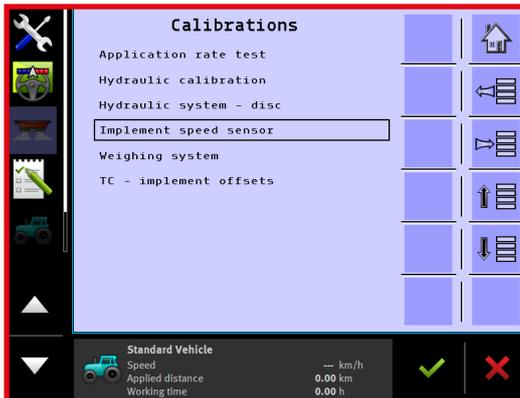
Press the start key 

The tractor's engine must be running at operating rpm and the oil must be at operating temperature.

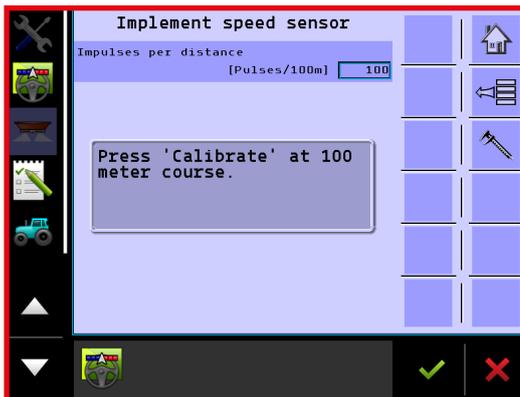
When the tractor's oil connections are opened, the discs begin to rotate; set the tractor's oil volume to achieve a disc speed of roughly 100–200 rpm above the preferred rpm for field spreading.

> IMPLEMENT SPEED SENSOR

A value has already been entered at the factory, but it is advisable to check whether the spreader's forward speed is correctly indicated, because otherwise the spreader will not apply correctly. Try comparing the spreader's forward speed to the tractor's forward speed. If the spreader's forward speed is incorrect, it needs to be recalibrated. It is also possible to choose a different speed source than the spreader (such as GPS speed, if the tractor terminal is connected to a GPS aerial). To change speed source (see p. 32).

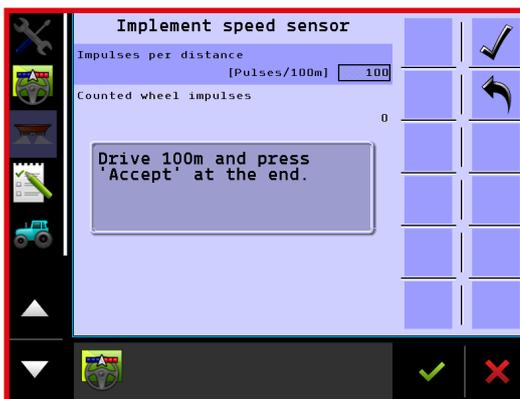


Select "Implement speed sensor" to enter the menu.



Press  to calibrate.

The number of pulses can also be entered directly in the input field, if you know the number.



Drive 100 meters forward. Count the number of impulses.

Press  to save the number of impulses counted.

> ZEROING THE WEIGHT CELLS

If weight cells display does not read 0 kg when the spreader is empty, it is possible to zero the weight cells.

Press the  key on the Home screen display.

Select "Machine"

Select "Calibrations"

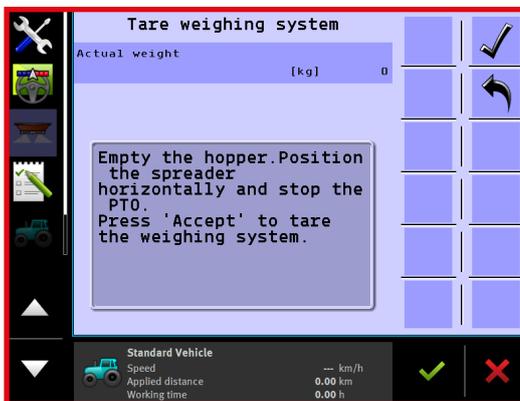
Select "Weighing system"

Select "Tare weighing system"



Press  to tare the weighing system.

The spreader must be kept in a horizontal position when setting the tare weight.



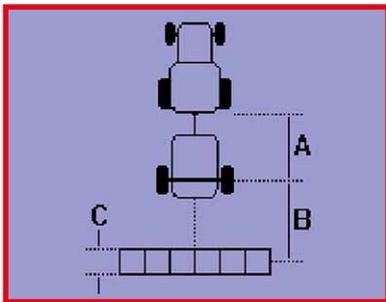
Press  to accept the taring of the weight cells.

> TC-IMPLEMENT OFFSETS

When operating with section control, and the spreader must automatically start and stop spreading when turning in the headland, the following distances must be entered in order for the spreader to start and stop spreading at the right time:

- A = distance from the tractor hitch to the spreader axle
- B = distance from the spreader axle to the center of the spreading pattern
- C = length of the spreading pattern

Based on Bredal's experience, Bredal has worked out some distances that usually work but there may be slight differences depending on which working width is used, and there can also be differences depending on the type of fertilizer used. The Bredal recommended fertilizer distances of 24 meters are entered at the factory:



FERTILIZER:

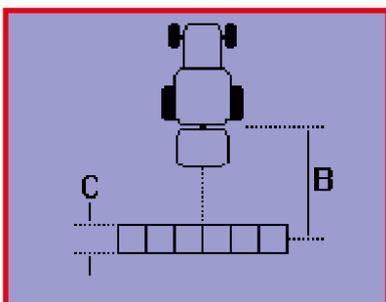
- A = 4.0 meters (6.0 meters with bogie)
- B = 8.0 meters
- C = 5.0 meters

Experience shows that the B value must be higher the wider the working width. A value that is 2–4 meters higher is recommended for 36 meters.

LIME:

- A = 4.0 meters (6.0 meters with bogie)
- B = 5.0 meters
- C = 4.0 meters

If a GPS aerial is mounted on the front of the tractor, select “three-point hitch” and the following distances instead. In this case, B = the distance from the tractor hitch to the middle of the spreading pattern.



FERTILIZER:

- B = 12.0 meters (14.0 meters with bogie)
- C = 5.0 meters

Experience shows that the B value must be higher the wider the working width. A value that is 2–4 meters higher is recommended for 36 meters.

LIME:

- B = 9.0 meters (11.0 meters with bogie)
- C = 4.0 meters

ADJUSTING STOPPING/STARTING DISTANCES

Usually, only the B value is changed.

If the spreader starts/stops prematurely, increase the B value.

If the spreader starts/stops too late, lower the B value.

Only change the C value if more or less overlap at both starting and stopping is preferred.

Lowering the C value increases the overlap.

Increasing the C value reduces the overlap.

Press the  key on the Home screen display.



Select "Machine"



Select "Calibrations"



Select "TC – implement offsets"



Press one of the input fields "(m)", to change the entered value.

TESTING INPUT AND OUTPUT

It is possible to test the spreader's input and output on the testing menu.

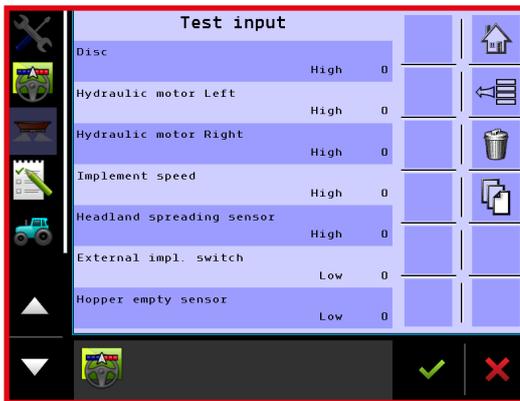
> TESTING INPUT

Press the  key on the Home screen display.

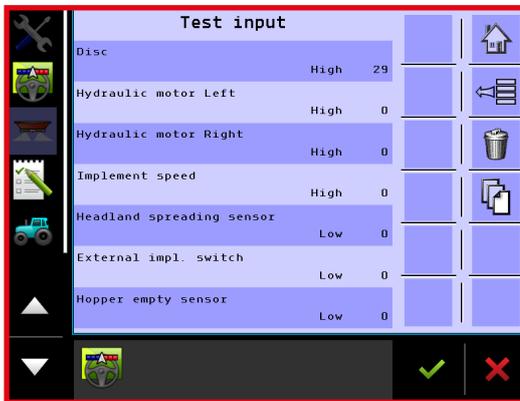
Select "Help"

Select "Diagnostic"

Select "Test input"



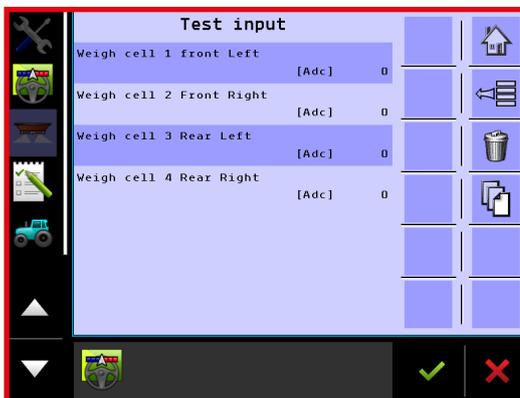
All the inputs from the spreader are listed on the test input menu. For instance, when an inductive sensor is affected, its status changes between high and low, and all impulses coming from the sensor are added up.



In this case, 29 impulses have been counted from the inductive sensor on the left spreading disc.

After exiting test input, all impulses counted will be deleted. It is also possible to delete the counted impulses by pressing .

Press  to view input from the weight cells.



Weight cell input can be viewed on this page. Impulses are continuously being transmitted from the weight cells when they function properly, i.e. they count from 0 up to 9999, after which the counting resets and starts over. If one of the weight cells has failed to show a value, it has a problem. Perhaps the load cell is not working properly, i.e. the cable is ruptured or improperly attached to the terminal box.

> TESTING OUTPUT

Press the  key on the Home screen display.

Select "Help"

Select "Diagnostic"

Select "Test output"

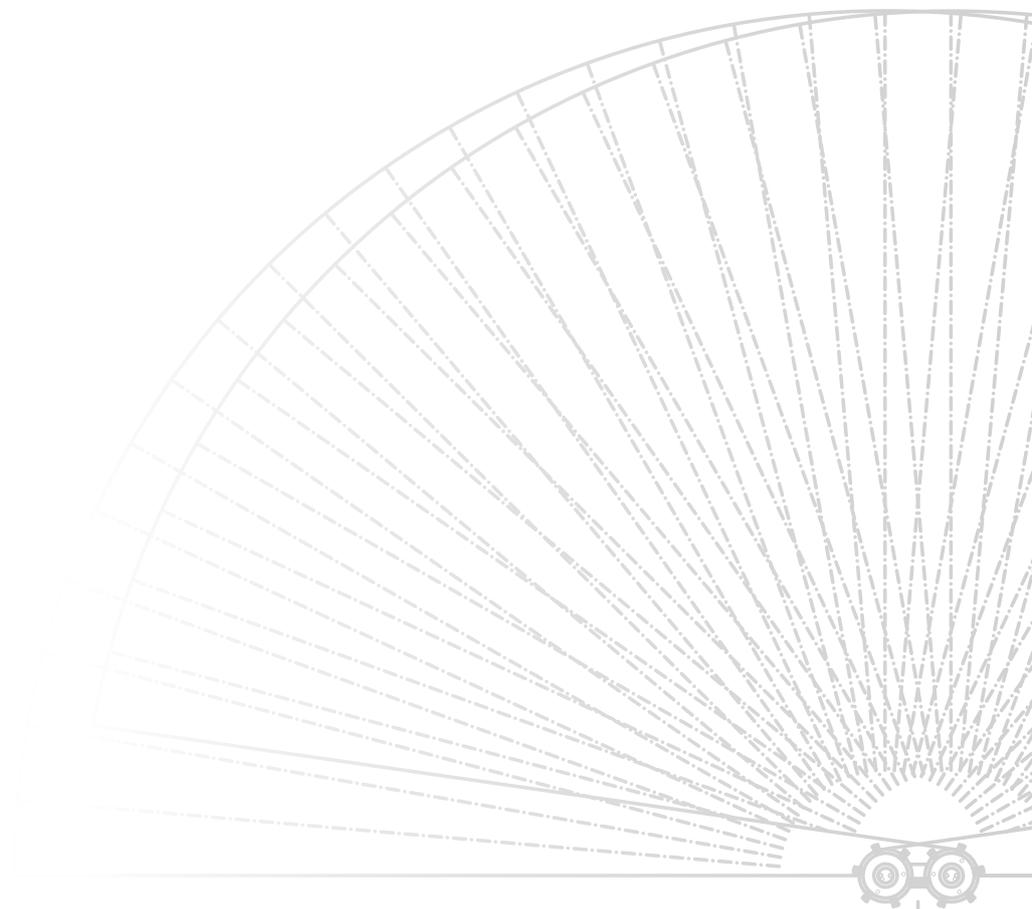


Make sure that no one is near the spreader when functions are being tested!



Here it is possible to test the proportional valve which regulates floor-belt speed. Enter a % value in the text box. If 100% is entered, the valve will open fully, and the belts will operate at maximum speed.

Press  to start the floor belt. Oil must be flowing from the tractor in order for the floor belt to run.



RELOAD FACTORY SETTINGS

If any values in the basic settings are mistakenly deleted or changed, the original factory settings can be reloaded. Note that any values that have possibly been changed since the implement was delivered from the factory will be reloaded to the original values when the factory settings are reloaded.

The values reloaded with this function are as follows:

- Application rate (cm³/impulse)
- Speed sensor for forward speed
- Weight cells' calibration figures
- TC – implement offsets
- No. of pulses per disc revolution
- No. of pulses per oil-motor revolution
- Gear factor for headland gear (headland-gear downshifting as a percentage)
- The proportional valves' PID parameters and PWM signal.

After reloading the factory settings, the spreader's application rate and weighing should both be checked and monitored, as there is a risk of making application errors if a reloaded figure is incorrect.

Press the  key on the Home screen display.

Select "Help"

Select "Load factory settings"



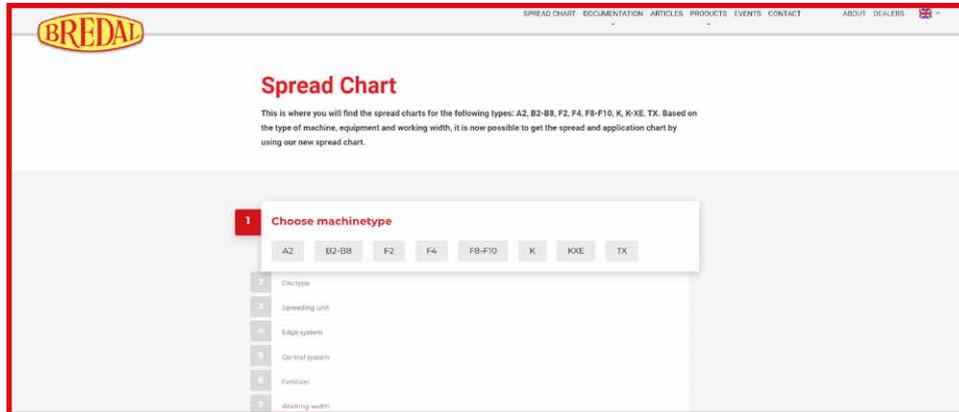
Press  to reload the factory settings.

Press  to return without making any changes.

SETTINGS FOR VARIOUS TYPES OF FERTILIZER

Settings for various fertilizer types can be downloaded from Bredal's website. The settings are determined by testing the various fertilizers in practice. Update the settings on an ongoing basis to make sure they are up to date. It is advisable to use these settings. It is also advisable to carry out a fertilizer spreading test in the field to make sure that a satisfactory spreading pattern is achieved (see p. 49).

Go to Bredal's website www.bredal.com



At the website, select "Spread Chart" in the menu at the top of the screen.

Under "Machine type", select "K"

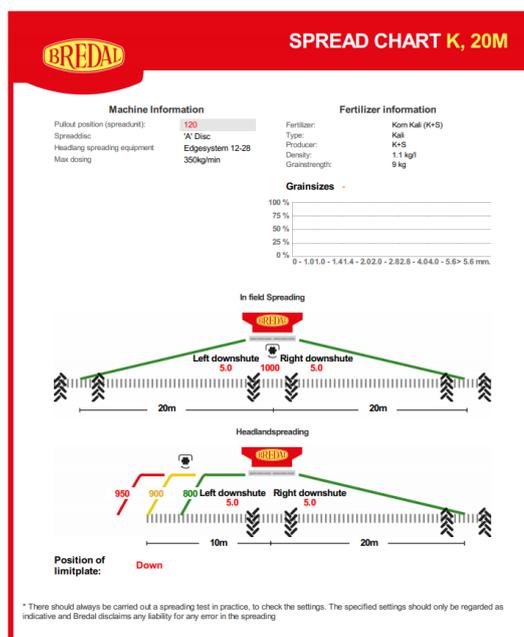
It is possible to choose between an A or H disc (the default K setting is A discs)

Select mechanical or hydraulic spread unit

Select the type of fertilizer to be spread

Select the working width to be used

Press "Download as PDF"



This will take you to the results page with the settings that fit the type of fertilizer selected.

Enter the recommended downchute settings for field and headland spreading in the computer.

Also, the spreader should be set to run at the recommended PTO rpm.

The fertilizer, name, manufacturer, density, crushing strength and granule distribution selected appear in the spread chart at the top of the results page.

The recommended downchute settings and PTO rpm for field spreading are shown in the center of the chart.

The recommended downchute settings and PTO rpm for headland spreading are shown at the bottom of the chart (scroll down).

Red = complete spreading to boundary

Yellow = medium spreading along boundary

Green = very little fertilizer beyond boundary

TROUBLESHOOTING

This section describes the most common faults that can occur as well as the possible cause of the various error messages. It also provides some help for troubleshooting the spreader's electrical components.

> ELECTRICAL FAULTS IN GENERAL

The vast majority of electrical faults and irregularities in the ISOBUS program are caused by a poor connection in the ISOBUS outlet. Therefore, start by blowing the outlet clean, spray it with contact spray and make sure to insert the plug correctly. Check to make sure that the ISOBUS cable is not damaged.

> RATE OFF TARGET



The most commonly occurring error message appears when the spreader's floor belts do not run at the right speed or do not run at all. The alarm can often be emitted very briefly and it will automatically stop as soon as the fault stops. If this is the case, it does not mean that there is a fault in the spreader, but that the application rate has briefly been outside the application range. If the error message does not stop, it is because the fault prompting the message has not been resolved. There may be several reasons for this:

IF THE FLOOR BELT IS NOT RUNNING, THE ERROR MESSAGE MIGHT BE CAUSED BY THE FOLLOWING:

- The forward speed is too high, preventing the spreader from applying the preferred amount.
- The oil-flow setting on the tractor's oil outlet is too low.
- The spreader is set to spread a large volume and the rear doors are set at a small opening.
- The spreader is set to spread a small volume and the rear doors are set to open too wide.

IF THE FLOOR BELT IS RUNNING TOO FAST:

- The inductive sensor on the gearbox is not sending any impulses.

IF THE FLOOR BELT IS NOT RUNNING AT ALL, THIS COULD BE CAUSED BY THE FOLLOWING:

- The flow of oil through the tractor's oil outlet has not been opened.
- The tractor has blocked the return flow of oil. Try to briefly reverse the direction of oil pressure against the normal circulation direction, and then re-open the oil circulation in the correct flow direction.
- Poor connection in the ISOBUS outlet: try pulling out and re-inserting the plug.
- A loose connection or damaged electrical cable connected to oil-motor activation.
- The floor belt needs to be tightened. Tighten both nuts by turning them one revolution at a time until the belt keeps up.

If the problem is due to a fault in the control or electrical system, the belt can be manually operated by screwing in the thumb screw on the oil motor/gear valve, while oil flow from the tractor is open. If the floor belt still does not run, the fault is in the hydraulic system.

NB: screw out the screw as far as possible for normal operation.



> CHECKING THE GEARBOX SENSOR



It is possible to check a sensor's function. If a sensor does not count or if it counts incorrectly, it is often the pick-up distance, i.e. the distance between the sensor and the tooth being scanned, that is too great. The pick-up distance of the gearbox sensor is 1–1.5 mm, so if the sensor is not close enough to the gearbox cogwheel, it cannot detect the teeth and therefore will not send a signal to the computer.

Press the sensor on the gearbox as far as possible into its installation hole. It is held in place by an 8 mm screw. Loosen the screw and make sure the sensor is pressed in as far as possible. It may be necessary to rotate the sensor slightly as it will otherwise tend to return to the same position when the screw holding it in place is retightened.

Check whether the sensor is working by holding it against a piece of metal. In the terminal, select "Test input" (Home – Menu – Help – Diagnostic – Test input). Now all inputs from the implement's sensors will be viewable.

Test input		
Disc	High	0
Hydraulic motor Left	High	0
Hydraulic motor Right	High	0
Implement speed	High	0
Headland spreading sensor	High	0
External impl. switch	Low	0
Hopper empty sensor	Low	0

By holding the gearbox sensor against a piece of metal, the input in the terminal's test menu will change and an impulse will be counted. If the input does not switch between high and low and if impulses are not counted, the sensor is either defective or is not being supplied with power (12 V). If there is no power, the implement's other sensors will not work either.

If the gearbox sensor is defective, it must be replaced by the same type of new sensor (Bredal order no.: 301001258).



> CHECKING OTHER SENSORS

Sensors for disc rpm, headland gear and driving speed can be tested in the same manner as the gearbox sensor.

The key distance for these sensors is approx. 2 millimeters.

Bredal order no.:

Disc rpm and headland gear: 301001201

Wheel sensor: 3010012407

[]

[]



MANUAL K SERIES

EN

For more than 50 years, BREDAL has specialized in the development and production of high-quality lime and fertilizer spreaders for agricultural purposes. The company's goal is to build reliable machinery, precise in use, and simple to operate and maintain. In recent years, the product line has also included winter equipment such as sand and salt spreaders.

The company's interests in countries importing BREDAL machinery are represented by local importers who sell BREDAL spreaders and provide technical support and service.

BREDAL is located in Vejle, Denmark, where it has state-of-the-art production facilities with the latest technologies ensuring the production of top-quality machines.

SIMPLE
PRECISE
RELIABLE