

User's manual

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Machine identification

Your supplier needs your machine's particulars in order to assist you as soon as possible. Please enter this information here.

Name iXspray spray control

Working width

Weight

Machine number

Accessories

Address of the supplier

Manufacturer's address Kverneland Group Nieuw-Venep B.V.
Hoofdweg 1278
NL-2153 LR Nieuw-Venep
The Netherlands



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Target group of this manual

This manual is intended for fully qualified agrarians and other persons authorised to use the machine and other crop protection products in accordance with national legislation. Training for the agricultural sector and knowledge of assembly activities are required.

Other documents

In addition to these instructions, the machine includes other documents, such as:

sprayer instructions	component of sprayer delivery
boom instructions	component of sprayer delivery
control box instructions	IsoMatch Tellus GO ⁺ /Pro
(optional) hardware instructions	ISO-match GRIP
GEOCONTROL instructions	component of software delivery
spare parts manual	

Definition of the term machine

The machine is understood to mean effective combination of an agricultural spray with the spray control and control box described in this manual.

For your safety

Ensure that you are familiar with the contents of the manuals before you start using or assembling the implement. This will ensure that you obtain an optimum result and are working safely.

Should you have any questions or if anything is unclear, please contact the manufacturer.

Ensure that the manual is available to all persons who will be working with the machine. In this way, you will:

- avoid accidents,
- respect the warranty conditions,
- always have a good functioning machine in perfect working order.

For the employer

- Personnel who operate the machine must be authorised to do so in terms of the applicable national legislation.
- The personnel are to be trained in the use of the machine regularly (at least once a year) in accordance with employers' liability insurance association guidelines. Untrained or unauthorised individuals are not permitted to use the machinery.
- You are responsible for the safe operation and maintenance of your machine. You must ensure that you and anyone else who is going to operate, maintain or work around the unit be familiar with the operating and maintenance procedures and related safety information as mentioned in this user's manual.
- You are responsible for providing personal protective gear to personnel who use the machine or who are performing maintenance or repairs on it. This includes the following: safety shoes, safety gloves, spray overall, safety mask with air filter, etc.

Meaning of symbols

Various symbols are used to provide a clear understanding of the text. These are explained below.

- A dot is placed before lists.
- ▶ A triangle marks tasks you have to perform.
- A reference is indicated by an arrow.

In addition, we use pictograms to help you to easily find certain text sections.

TIP The words “Tip” and “Hint” are followed by tips or hints for operation.



The warning triangle indicates important safety instructions. Failing to comply with these may result in:

- serious operating malfunctions of the machine;
- damage to the machine;
- injuries or accidents.



The spanner indicates tips for assembly or adjustment work.



A star indicates that examples will follow that are intended to clarify the text.

[+] An option is indicated by a +.



Safety requirements

Knowledge of the safety regulations forms the basis for safety and proper usage of the machine.

Follow in this regard the instructions given in the user manual of your agricultural spray.

most accidents are avoidable.

By ignoring the safety instructions, you would be risking serious or fatal accidents.

Intended use

This software included with the machine is exclusively intended for spraying liquid agents normally used within the scope of agriculture.

Any other application would be considered to be irregular. The manufacturer is not responsible for damage that may result from such usage; risks are taken exclusively by the user.

The instructions, maintenance requirements and reparation stipulations as indicated by the manufacturer must be adhered to at all times.

→ Follow the manual of your sprayer.

Authorisation

Only to be used by an authorised person

This software that comes with the machine may be used by authorised people only. A person is authorised if he/she:

- received training as required by the national authorities,
- takes and has taken responsibility.

Working in thunderstorms

Never perform any work on the machine while it is outside during a thunderstorm. There is a risk of lightning striking.



Spraying agents

Avoid contact with materials

You could come into contact with materials when filling the machine. Always wear protective clothing, such as safety gloves, shoes, filter mask and goggles. Read and adhere to the additional safety instructions and the of the material producer. Contact with the materials could lead to injury. Contact your physician in such an event!

Chemical reactions caused by mixing materials

Mixing materials can cause chemical reactions, giving rise to poisonous vapours, fluids or solids. Possible danger of explosion! This could lead to personal injury and damage to the crop and machine. Only mix types of fertiliser if the manufacturer(s) indicated that this can be done. Chemical reactions could lead to damage to the machines and personal injury.

Read the safety instructions provided by the supplier

Read the safety instructions provided by the supplier and apply that. Protective clothing should be worn when necessary. Disregarding the safety instructions could result in personal injury and damage to the machine.

Work with a closed cabin

Dust from materials can blow indoors through open windows, doors or other openings. Moreover, the sound level is higher in an open cabin. It is therefore recommended to always work with a closed cabin with active carbon filters in the air inlets. Spraying agents and prolonged high noise pollution could lead to serious bodily harm.

.Fill as per instructions

- It is not permitted to fill crop protection vehicles from surface water in the best interest of people, animals and the environment!
- All supply systems must have a check valve in place to prevent backflow.
- Operate the suction valve after the pump has started to prevent backwashing.

Take the regulations put in place by the local authorities into consideration with regards to water consumption.



Maintenance

Performed by an authorised person

Always have an authorised expert perform maintenance and repairs, as described in

→ paragraph »Authorisation« on page 9.

Maintenance performed in an inexperienced manner could lead to unsafe work situations or damage to the machine or crops.

Never use the tractor in a closed area

The tractor must never be used in a closed area. Exhaust fumes collect without being noticed. Exhaust fumes can cause serious or deadly injuries.

Prevent unintentional operation

Render all parts that could contain residual energy safe, as well as all parts that conduct energy such as compressed air, hydraulics and electricity. Release all pressure from the system and disconnect the pipes and cables. Unintended operation could lead to injury.

Checking for technical failures

Check before using the control box whether it returns in perfectly working condition

state. In case there are any defective components, contact your supplier for replacement. Defective components can cause failure, which can lead to damage or injury.

Keep in good working condition

Keep the control box in good working condition.

Use original parts

Only use original parts from the Kverneland Group. Using other products can cause failure or lower safety. The validity of the guarantee is voided

if non-original spare parts are used.

You can use the supplied parts manual (either as a printout or as a PDF in the included memory card) to locate the correct part number.

Do not open the control box

Do not open the control box housing. Opening the housing can lead to shortening of the life cycle and can compromise the working

of the control box. Opening of the control box voids the guarantee. Check cables

Check the cables before connecting and replace damaged cables. Damaged cables can cause damage and failure on the control box.

Checking the temperature range

Maintain the temperature range of the control box in the gap. Higher or lower operating temperatures can cause failures in the control box.



What to do in case of technical failure

If there is a technical failure

- ▶ stop the operation
- ▶ Read "Troubleshooting" to remedy the problem
- ▶ if the problem persists, contact your dealer

Continuing operations in spite of technical failure can lead to damage.

Disconnect the power supply during maintenance

Disconnect the power supply from the battery during maintenance and installation activities. Otherwise, the control box may be damaged.

Inspect the supplied machine

The software as part of the machine would generally be assembled and delivered ready-for-use by the dealer. The dealer is also responsible for providing instructions for use and maintenance. He/she must also ensure that the required documents are provided, see »Preface«

If parts are missing or have been damaged during transport, you should report that to your dealer directly on delivery.

Tractor provisions

Working with the machine requires a tractor that at least meets the following requirements:

ISO tractor

ISOBUS and control box

An ISOBUS and control box are essential to operate the sprayer with iXspray control.

Non-ISO-tractor

Upgrading to ISO-tractor

A non-ISO tractor needs to be adapted to the ISOBUS standard. An IsoMatch Tellus Pro or IsoMatch Tellus GO⁺ control box then serves as a tractor control box. An IsoMatch power cable set or an ITH adaptor cable set completes the ISO upgrading of your tractor. Only the IsoMatch Tellus Pro/GO⁺ upgrade is suitable as a full ISO communication system.

Control box

An operating control box is needed to operate the machine

TIP Use the assembly instructions in the instruction book of the control box and the components list to find the parts and their place in the machine.

Driving speed signal

To function well, the machine needs a driving speed signal. A sensor is mostly present on the trailer machines.

In case of drawn machines, a sensor from the tractor is used or one installed.

In tractors with the ISOBUS communication system, the tractor takes care of the signal. Tractors with an ISOMatch can receive the signal from the tractor electronics, tractor radar or wheel sensor.

If you want to use the driving speed signal of the GPS receiver on the tractor, you should connect the plug behind the control box. Then switch on the appropriate external signal as described in

→ See »Speed« on page 126.

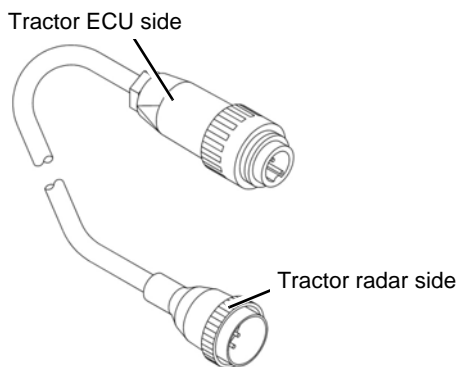
and the reception of an external signal and the required speed reduction,

→ See “Activating communication with a Task Controller” on pagina 114.

See also the user's manual of the

- control box,
- tractor
- or radar sensor.

Tractor radar or electronic unit



In order to connect the ISOMatch to the tractor radar or tractor electronics, a number of brand-specific cables are available.

→ Follow the spare parts manual or consult your dealer.

- ▶ Then fit the specific cable between the universal plug on the ISOMatch power cable set and the tractor radar or electronic unit.

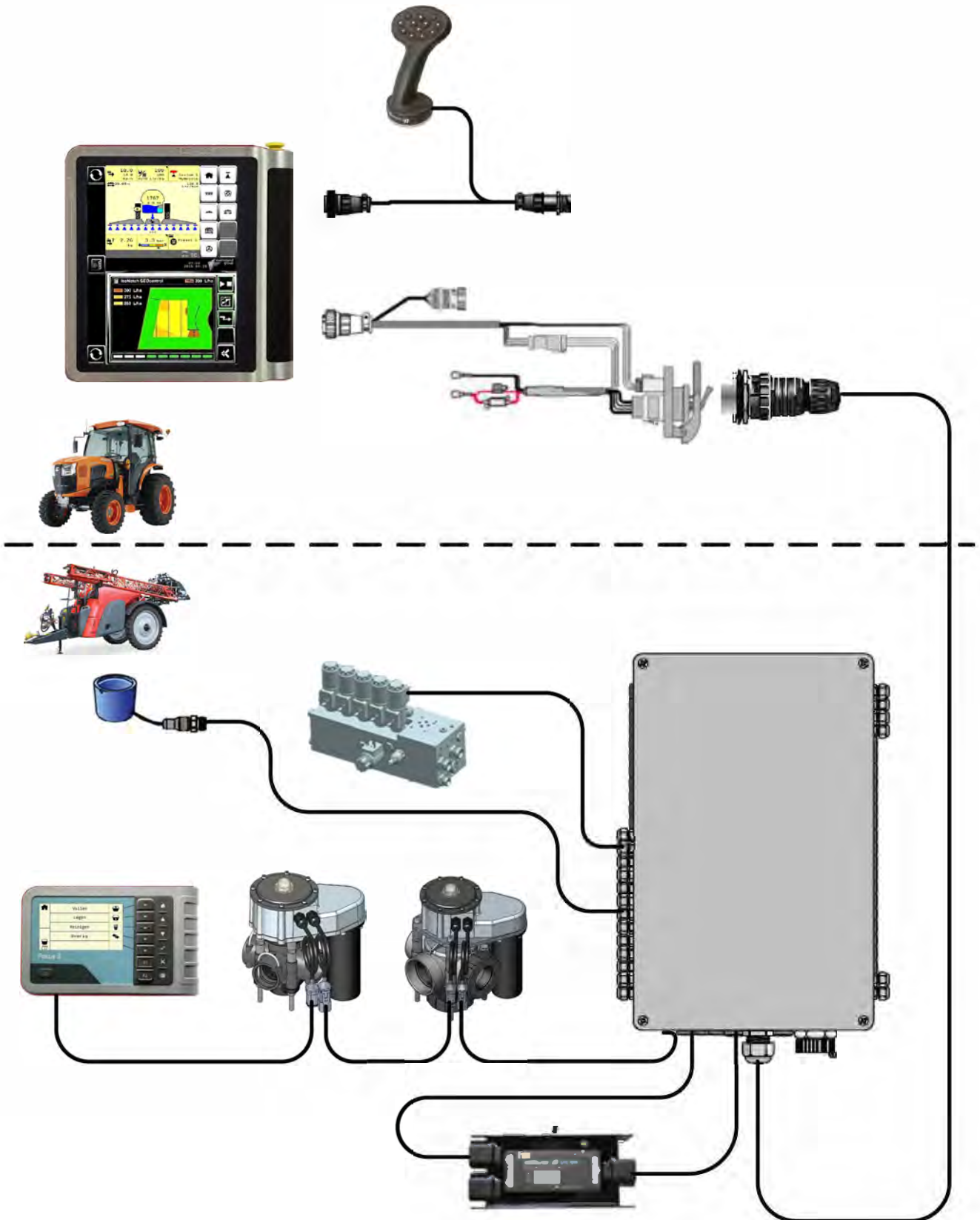
Wheel sensor

If the tractor does not have a pulse generator for driving speed measurement a wheel sensor can be placed over a rotating object. This object must be connected with the front wheels in order to obtain a reliable reading. Few options are:

- reinforcement strips from the front hub,
- lug bolt heads in the hub,
- intermediate shaft to front wheel drive,
- wheel ring.

→ Follow the instruction manual of the sprayer.

System overview



iXspray system

iXspray system components



The iXspray system consists of;

- Machine cabinet for controlling cylinders and cranes etc. and reading out different sensors.
- Software.
- Control boxes:
 - Tellus PRO. See the instruction manual for the Tellus Pro.

- Tellus GO⁺. See the instruction manual for the Tellus GO⁺.

- The sprayer is equipped with a Focus 3 control box. See “Focus 3 control box” op pagina 144

The wet system of the iXspray can be supplied in various versions:

- iXclean with mechanical level measurement.
- iXclean with electrical level measurement

The following options are offered:

- IsoMatch Grip

The iXspray system supports every ISOBUS Task Controller, which makes it possible to spray using specific locations via GPS.

Tellus GO⁺ and PRO come with the GEOCONTROL Task Controller pre-installed by Kverneland.

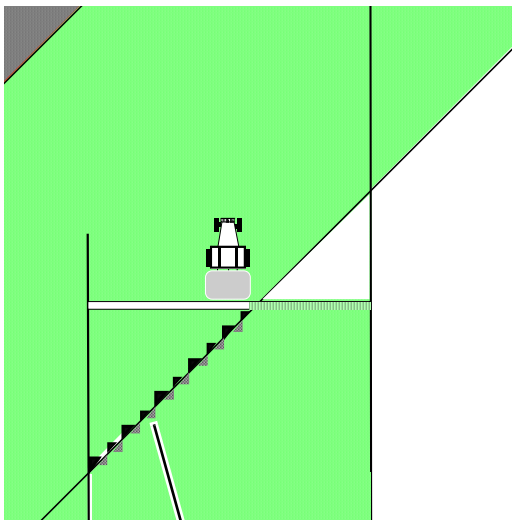
[+] IsoMatch Grip



The IsoMatch Grip accessory is a control unit on which most of the implement functions used can be operated centrally with one handle. This is to complement the ISOBUS control box.

- See "Control via an ISOBUS control unit" op pagina 154
- See the IsoMatch Grip manual.

Task Controller software



Slanted connection on the headland by automatic section control

The ISOMatch web-shop offers additional software licences for the use of all functions of the machine.

SPRAYERCONTROL

The SPRAYERCONTROL license is available for use of the control with the Task Controller.

GEOCONTROL

With the GEOCONTROL software, connection of

- the passes on the headland,
- slanted connection on the headland
- and last incomplete pass improved.

You have a fully automatic section control of your machine with GEOCONTROL.

Slanted connection

A headland connecting at a slant is correctly connected in the pass by the automatic section control from the GEOCONTROL.

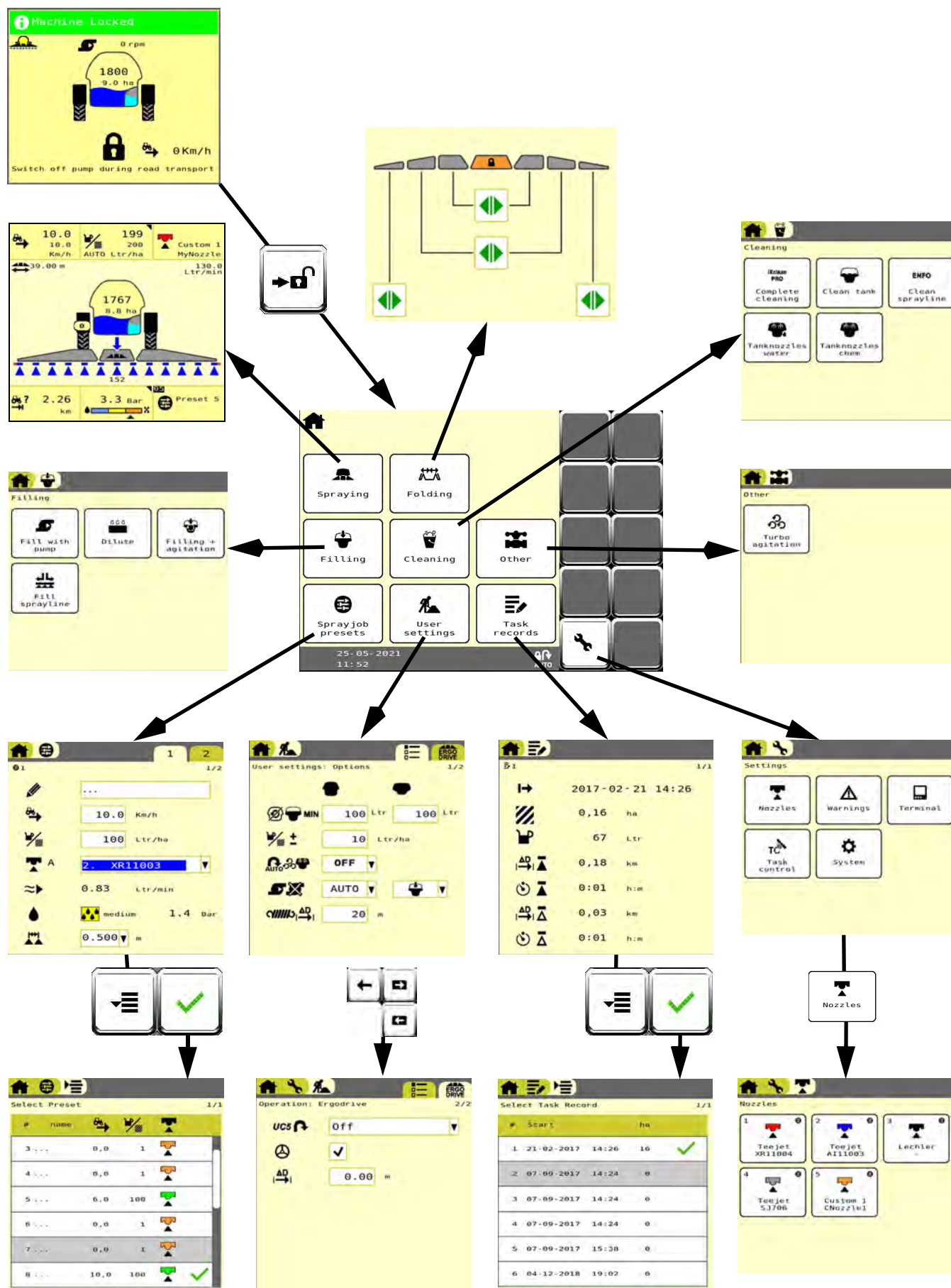
ISOMatch webshop
www.isomatchshop.com

Additional information and purchase of software licenses

Go to the ISOMatch web-shop to view all possibilities for your machine. Here you will find a comprehensive description of all software and associated positioning potentials.

iXspray operation

Menu structure

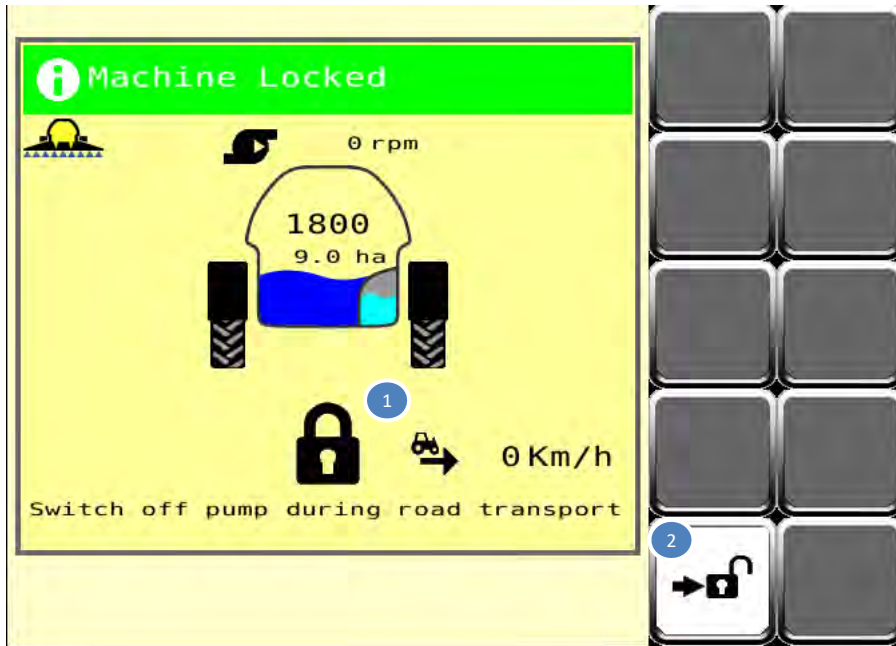


Machine locking

The “machine locked” screen appears as soon as the iXspray software is started. Many functions are blocked.

The machine lock applies to:

- driving with spray boom folded in at speeds above 15 km/h. 25km/h for self-propelled vehicles
The IsoMatch can continue to be used during road transport if cameras are used for peripheral vision.
- as soon as the iXspray software is started.



POS	Description	See page
1	Shows machine lock status	
2	Unlock machine lock button	

Unlocking machine

- ▶ Press the unlock button to remove the lock
 - if the driving speed has fallen below 15 km/h. 25km/h for self-propelled vehicles

The button is only displayed if the speed falls below 15/25 km/h.

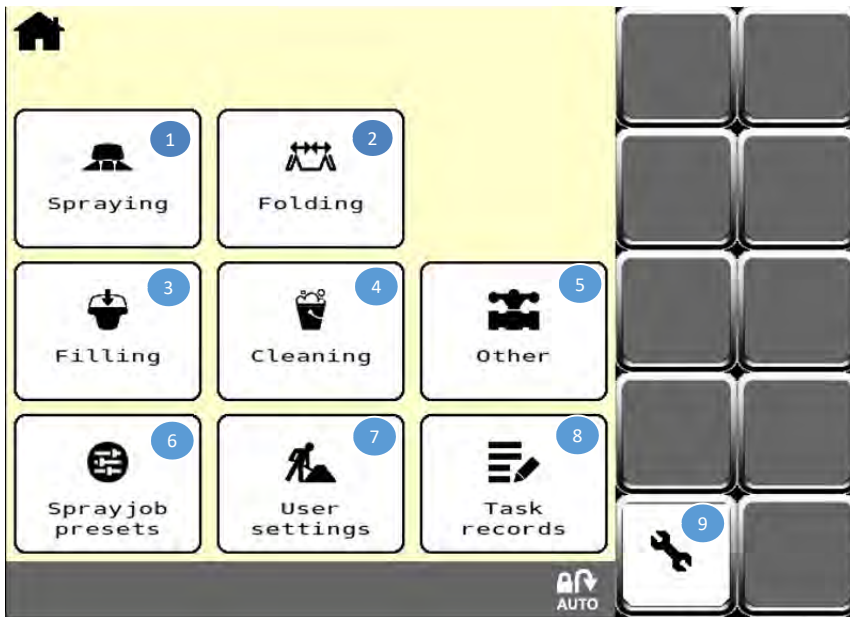
iXspray operation

Home screen



POS	Description	See page
1	Main screen	21
2	Side bar. Displays the currently applicable control buttons.	
3	Status bar. Displays date and time on the left and status icons for some machine functions on the right.	35

Home screen buttons









POS	Description	See page
1	Spray button.	23
2	Fold button.	40
3	Fill button.	52
4	Clean button.	70
5	Other button.	84
6	Pre-sets button.	87
7	User settings button.	92
8	Task Reports button (only visible when there is no connection to Task Controller).	98
9	Settings button.	100

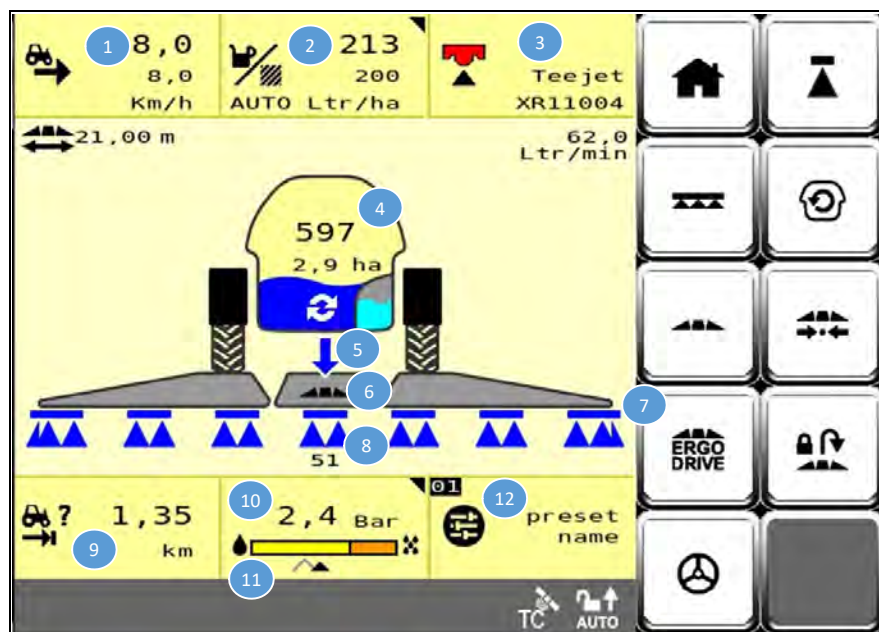
Icons in the status bar

The grey status bar, at the bottom of the screen displays the date and time on the left and the icons of the active options on the right.

Meaning of icons

Icon	Description	See page
	Headland curve assist status	37
	Connected to Task Controller	17, 113
	Section Control active	17, 115
	ERGODRIVE active	37
	Section Control status overrule	27
	SpotSpray enabled	116

Spray screen 1 of 3



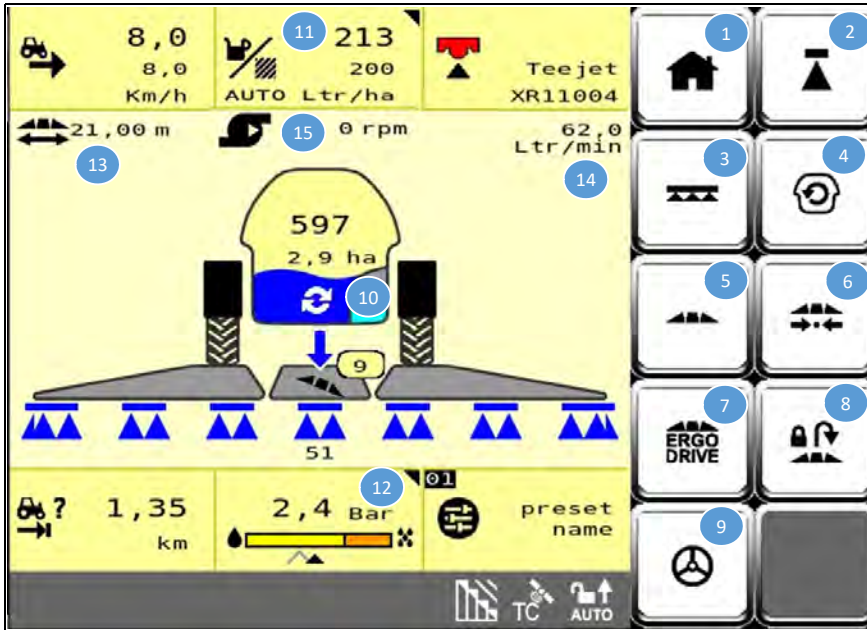
POS	Description	See page
1	Displays actual/required speed.	30
2	Displays actual/required application rate in L/ha during spraying.	31
3	Displays selected nozzle.	101
4	Displays current tank capacity in litres.	31
5	Displays the main spray switch status (on/off).	27
6	Displays slope correction status.	34
7	Displays current section status.	27
8	Displays the current ground-to-boom height.	33
9	Displays the current distance that can be covered during spraying based on tank capacity and the application rate of the active pre-set.	31
10	Displays the machine's current spray pressure.	31
11	Displays the droplet size range of the selected nozzle.	32
12	Displays the active reset number.	87

If the machine is equipped with iXflow-Pulse, see:

→ »iXflow-Pulse« on page 137.

Spraying

Spray screen 2 of 3

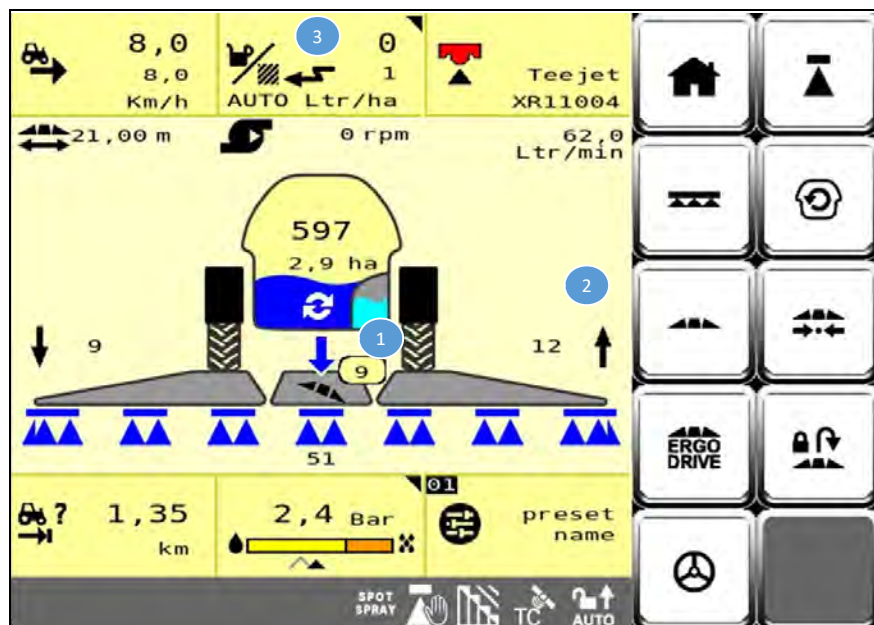


POS	Description	See page
1	Back to home screen button.	21
2	Turn spray on/off button.	27
3	Switch to page sections button.	29
4	Activate/deactivate agitator button.	30
5	Switch to mechanical boom control button.	29
6	The button automatically centres the slope correction.	
7	[+] ERGODRIVE on/off button.	37
8	[+] Activate/deactivate Headland Curve Assist button.	37
9	[+] Switch to operation control wheel axle button.	35
10	Displays agitator status.	30
11	Overdose and underdose control button	31
12	Switch to manual pressure control button.	32
13	Displays the combined spray boom length currently in use.	27
14	Displays the volume flow in litres per minute being sprayed.	
15	[+] Display pump RPM whenever the pump is hydraulically driven.	40



Manual on/off switching of autosteer on a self-propelled machine. Wheels are green when autosteer is engaged. Wheels are grey when autosteer is disengaged. If autosteer is engaged on the self-propelled machine, the function will not be visible (from version 1.12). The steering angle is not visible on the self-propelled machine.

Spray screen 3 of 3



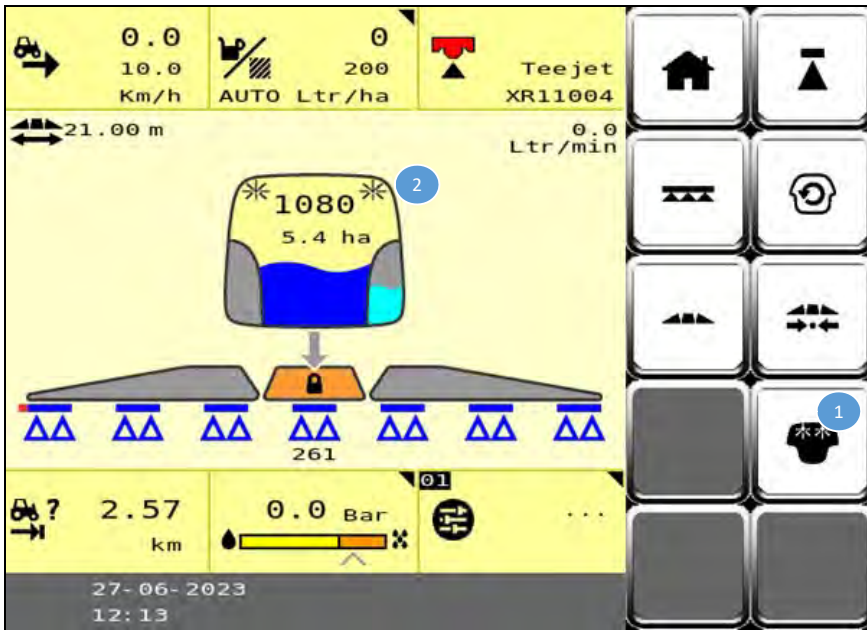
POS	Description	See page
1	[+] Displays the slope correction angle. The feature is disabled by default and must be turned on by a dealer.	34
2	[+] Displays the position of the independent slope correction. The arrow indicates whether the independent slope correction is higher or lower than horizontal. The feature is disabled by default and must be turned on by a dealer.	34
3	Displays that the set application rate is coming from an external source.	31

If the machine is equipped with iXflow-Pulse, see:

→ »iXflow-Pulse« on page 137.

Spraying

Spray screen with iXclean+



POS	Description	See page
1	iXclean+ button	
2	iXclean+ active (20 seconds)	

To comply with local regulations, an iXtera/xms1 machine can be equipped with iXclean+.
iXclean+ allows for easy tank cleaning from the cab of the tractor.

Activation from the cab, using cleaning water and spraying it onto the crop.
Directly after spraying: reduces the chance of drying residues and makes cleaning easier.

The machine is then equipped with an additional electric pump and a set of rinse heads.
After activating this function, the system pumps water from the clean water tank for 20 seconds and the rinse heads clean the tank.

NOTE make sure there is enough water in the clean water tank (at least 10 litres) to prevent the pump from running dry.

→ See the machine's manual.

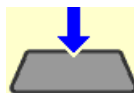
Operating functions spray screen

Spray on/off



Start and stop spraying.
→ See page 24

Whether the main spray switch is on or off can be determined by the arrow under the tank.



blue arrow: "Spray on"



grey arrow: "Spray off"

Section status



The rectangles indicate whether the section has been manually activated or deactivated. The triangles indicate the section's current status.



Solid triangle(s): active section and on.



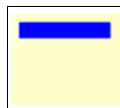
Empty triangle(s): active section, but off. The section is off due to the main switch being off or GEOCONTROL keeping the section closed.



There are some active nozzles in the section



There are no active nozzles in the section

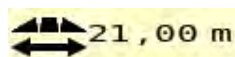


No triangle(s): section inactive and off.

The blue rectangles above the spray icons show the status of section switching.

Solid rectangle: section is active.

Empty rectangle: section deactivated via section switch.



Total working width of all active sections.

Spraying

[+] Edge/bank nozzles



Inwardly pointing triangle: Indicates the status of the bank nozzle. Status information is displayed in the same way as ordinary sections.



Outwardly pointing triangle: Indicates the status of the border nozzle. Status information is displayed in the same way as ordinary sections.



Activate/deactivate border nozzles left/right buttons.

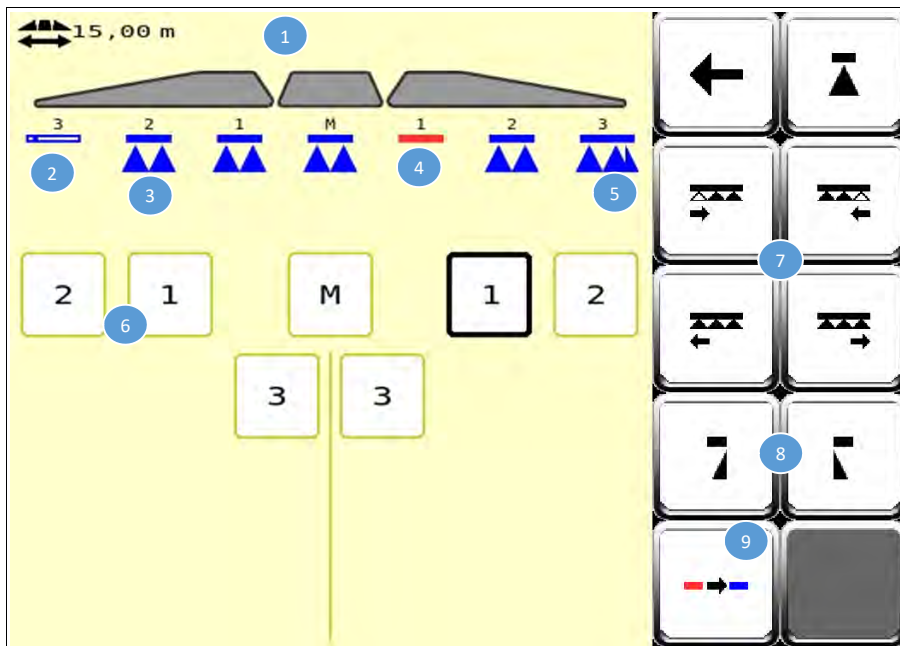


Activate/deactivate bank nozzles left/right buttons.

Sections switch screen

The following 3 methods are available for switching sections:

- From left/right.
- Switching individual sections (see page 30)
- Border and bank nozzle switching (see page 28)

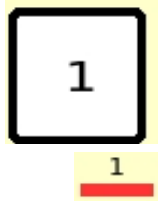


POS	Description	See page
1	Displays the combined spray boom length currently in use.	27
2	Section switched off by section switches.	27
3	Section switched on using the individual section buttons.	30
4	Section switched off using the individual section buttons.	30
5	[+] Bank nozzle (outward-pointing triangle), border nozzle (inward-pointing triangle).	28
6	Buttons for toggling individual sections on and off.	30
7	Buttons for switching sections off and on from the left and right.	
8	[+] Border or bank nozzle activation and deactivation buttons.	27
9	Button to turn on simultaneously all sections that are individually switched off.	

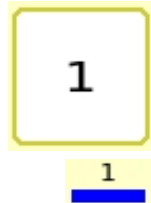
Spraying

Switching sections manually

At any point on the spray boom, you can activate and deactivate the different sections by pressing their buttons.

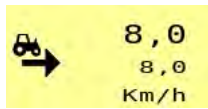


Section switched off using the individual section button.



Section switched on using the individual section button.

Driving speed



Upper value: current driving speed.
See chapter "Setting speed sources" on how to set the required driving speed on page 124
Lower value: set application rate.
See "Pre-sets" op pagina 87 to set the required driving speed

Agitator



Button activates or deactivates the agitator.



Agitator active



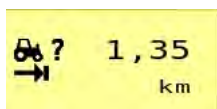
Agitator not active

To prevent foaming, the agitator automatically switches off when the tank level is very low. To set this level see "User settings" op pagina 92

Tank volume



Upper value: tank volume.
 Lowest value: the remaining hectares that can still be sprayed with the current spray settings.

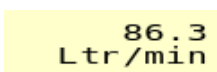


remaining distance that can still be covered with the current spray settings.

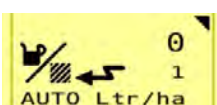
Automatic spray volume regulation



AUTO icon: the spray computer controls the application rate automatically according to the set value.
 Upper value: current application rate
 Lowest value: set application rate
 See "Pre-sets" op pagina 87 to set the application rate.



Current spray volume in litres per minute.



Application rate set from external source

Overdosing and underdosing



The application rate window can be pressed for temporary adjustments. The icon ▼ indicates that the window can be selected.



The application rate can be increased and decreased with the + and - buttons. See "User settings" op pagina 92 to set the step increment.

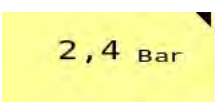


An orange background indicates that temporary adjustments have been made to the application rate. The orange colour shows temporary deviation from the preselected settings.



Return to the default application rate button as set in the spray operation pre-sets.

Spraying pressure

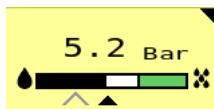



Spraying

Calculated spraying pressure using the selected nozzle and the sprayed litres.

[+] If a machine has a pressure sensor, the measured pressure is displayed rather than calculated.

Regulating manual application rate/ spraying pressure



Pressing the pressure window will allow you to manually adjust the pressure and thus the application rate. The icon  indicates that the window can be selected.



The MAN icon indicates manual control of the spray pressure. The orange colour shows temporary deviation from the preselected settings



Using the + and – buttons, you can increase and decrease the pressure and, thus, the application rate.

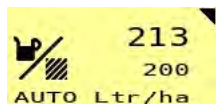


(from version 1.12)

When a temporary application rate is enabled, it is possible to save the modified rate.

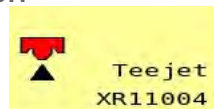
The data is stored in the pre-sets.

→ See »Pre-sets« on page 87.



Press the application rate window to return to an automatically controlled application rate.

Spray nozzle selection



Selected nozzle. The selected nozzle can be adjusted in the preselected settings. See “Jet nozzles” on pagina 101

Drop size



The bar below the pressure shows the working area of the selected nozzle. The colours indicate the different drop size bands as described in the spray nozzle documentation. From coarse drops on the left to fine drops on the right.

The black solid triangle shows the actual drop size.

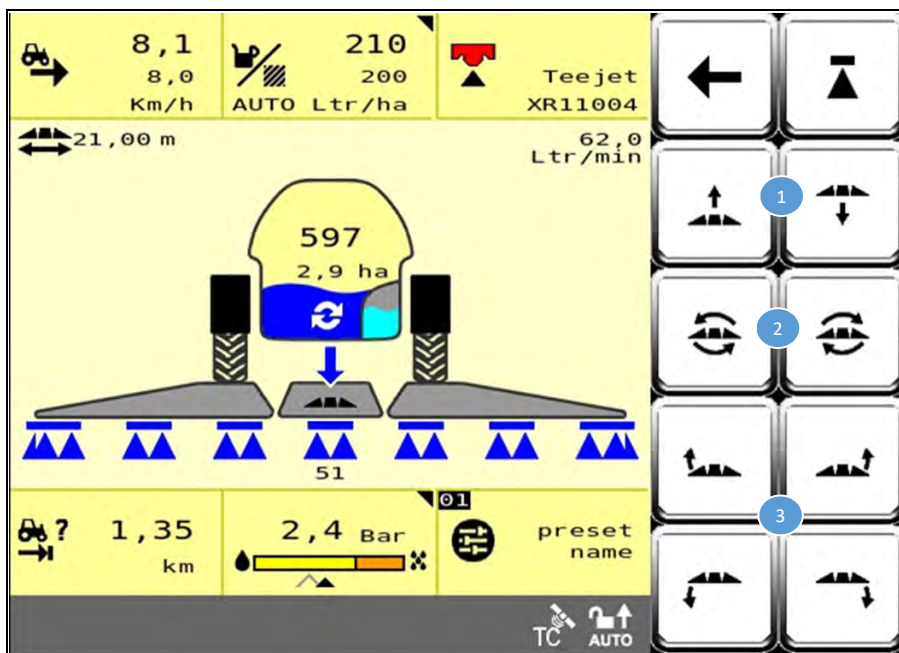
Drop size at the set application rate is shown by the open triangle.

When the black and open triangles overlap, the set drop size matches the actual drop size.



When the pressure and drop size are not within the specifications of the set nozzle, the pressure window turns red.

Mechanical spray boom operation



POS	Description	See page
1	Lift/lower spray boom buttons.	
2	Slope correction control buttons.	
3	[+] Independent slope correction control buttons.	

Spraying

Slope correction status



- The horizontal spray boom for slope correction is not blocked.



- Slope correction at an angle to the right spray boom is not blocked.



- Slope correction at an angle to the left spray boom is not blocked.

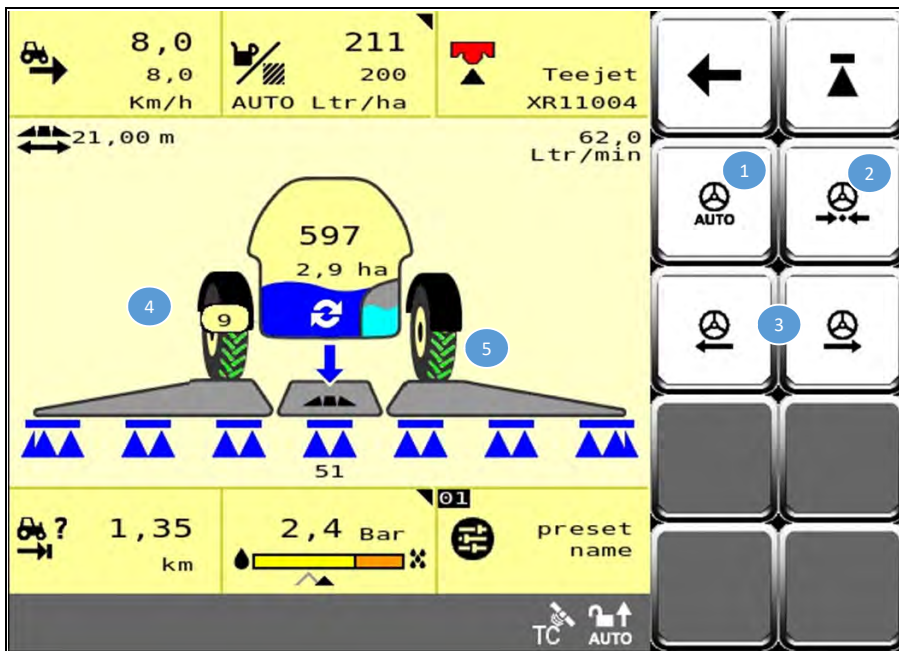


- Spray boom is blocked.



- [+] An optional slope correction angle number can be displayed if needed. If necessary, your dealer can provide you with this additional information.

[+] Wheel axle control



POS	Description	See page
1	Activate/deactivate tracking function button.	36
2	Automatically move the wheels to the central position button	36
3	Steer wheels to the left/right buttons.	36
4	Displays the steering angle.	36
5	Displays the position of the wheels and whether they are automatically controlled.	36

Trailed machines with steered axles provide automatic and manual track-following capabilities.

Automatic tracking is shown by a green colour on the wheels. The steering impact is shown by a number on the screen.

When ERGODRIVE is used, the system's automatic tracking can be switched on and off.

→ See “[+] ERGODRIVE user settings” op pagina 95

Spraying

Details buttons



The button can be used to switch the tracking system on and off.

When the booms are folded, the tracking system can only be used by continuously pressing the button.

When the button is released, the wheels return to their centred position.



The steering buttons can be used to steer manually. If pressed, these buttons stop automatic tracking.

The colour of the wheels turns grey to indicate that the automatic system is switched off.



By pressing the button, the wheels are moved to the calibrated central position.

The tyres first turn green and then grey again when the alignment is completed.

[+] ERGODRIVE

ERGODRIVE in spray screen



It is easy to turn and connect on the headland with the ERGODRIVE headland system.

It automatically switches a number of functions after using the Start/stop spray switch, which would normally be operated manually.

Switching ERGODRIVE on and off

This button is used to switch on and off ERGODRIVE on the spray screen.

→ See page 24.



ERGODRIVE appears in the status bar when activated.

→ See page 22.



An active ERGODRIVE performs the following actions when the main switch "spray" is activated before starting the pass:

- The spray boom is raised to the set spray height.
- Wheels are placed in central position, and tracking is plotted.

The following actions are performed when "spray" is deactivated before starting at the end of the pass:

- The spray boom is raised to the set headland height.
- When the spray boom reaches headland height, it is moved horizontally.
- Wheel tracking is activated.

Settings for ERGODRIVE use

- **Choose the correct base turning length**

Connect the headland properly with the tramlines by properly using the ERGODRIVE function.

→ See »Turning-in length after which spraying starts« on page 97.

- **Using tracking during spraying on sites full of bends.**

If during working, several sharp bends must be executed, it is advisable not to let ERGODRIVE disengage the tracking.

→ See "[+] ERGODRIVE user settings" on pagina 95.

- **Use the correct nozzle height above ground or crop**

Factor in the rutting, wheel size and plant height in the nozzle height.

→ See "[+] ERGODRIVE user settings" on pagina 95.

- **Choose the correct lifting height**

Occasionally, check that the lift height of the boom is not higher than required. This will lower the boom, well before the required start moment for spraying, towards the working height.

→ See "[+] ERGODRIVE user settings" on pagina 95.

[+] Headland Curve Assist

Spring tensioning

The Headland Curve Assist option is available for some types of sprayers. The Headland Curve Assist system ensures that headland

balancing is stiffer than in the field. As a result, the spray boom stays level along the bends of the headland.

The Headland Curve Assist is available in three modes. The status bar displays which mode is active.



- Headland manual mode: There is continuous stiff balancing in front on the headland.



- Field manual mode: There is continuous looser balancing in front at the field.

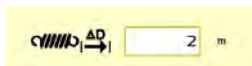


- Automatic mode: Balance system stiffness changes automatically.
 - Spray on: field mode, looser balancing.
 - Spray off: headland mode, stiffer balancing.



A button on the main screen allows you to switch between modes.
→ See page . 24

Loosening the balancing when entering can be delayed to prevent the balancing from becoming too fast when the plot is being screwed in.

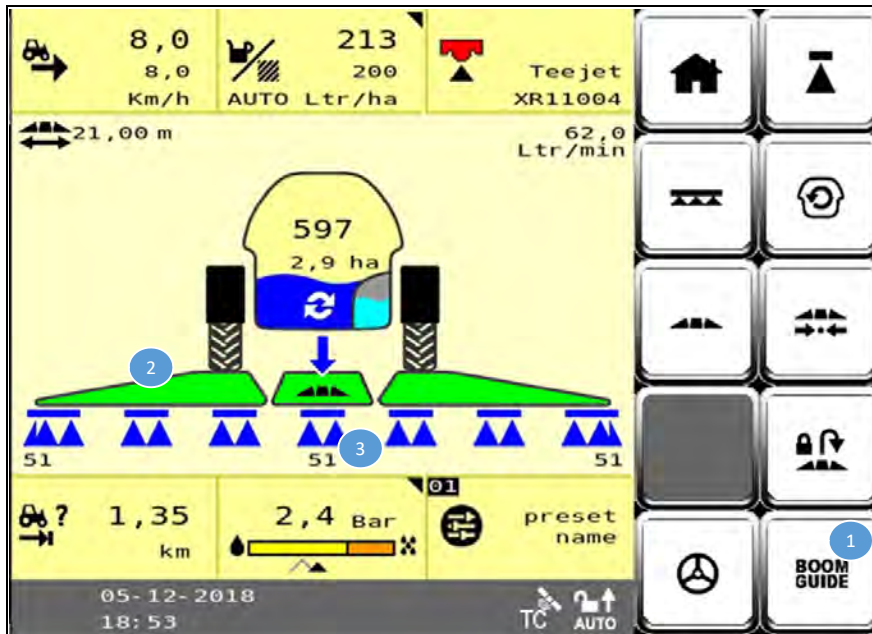


By increasing the number of meters distance, loosening of the balancing will occur later.

→ See page 92

[+] Boomguide

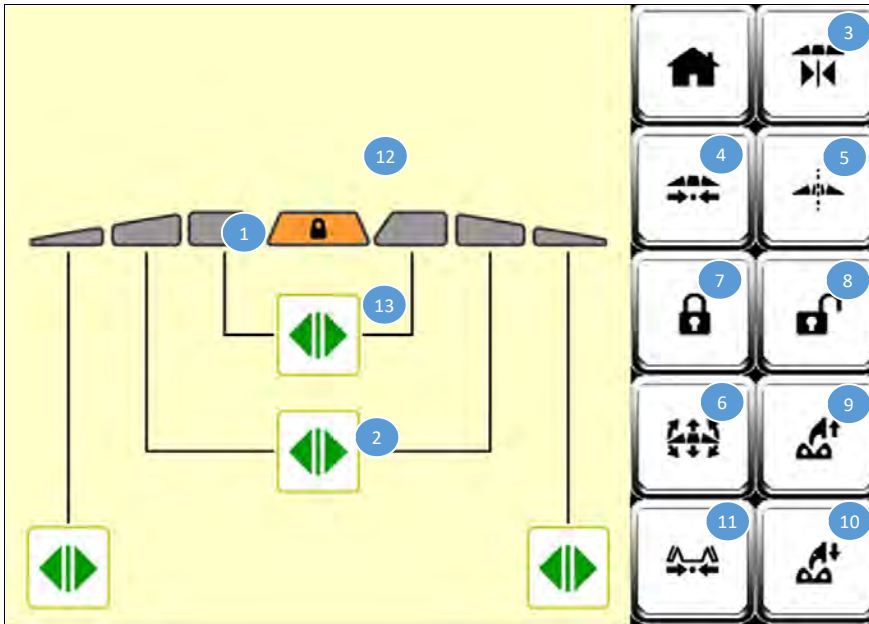
Boomguide measures the distance to the ground and automatically holds the boom at a fixed level above the ground.
 → See Boomguide manual.



POS	Description	See page
1	Boomguide on/off button.	96
2	The boom colour shows whether the boom is controlled by the boom guidance system. Green = Boomguide active (auto mode), grey = Boomguide not active (manual mode).	
3	Displays the distance between the ground and the corresponding boom section. The required height is displayed when Boomguide is active.	

Folding

Folding 1 of 2



POS	Description	See page
1	Displays the status of spray boom locking system.	29
2	Button: Fold and unfold the spray boom sections.	
3	Button: Toggle the fold buttons between folding and unfolding.	
4	Button: Centre the slope correction automatically.	41
5	Button: Switch the folding between symmetric and asymmetric (if possible).	
6	Button: Activate the folding screen with spray boom lift and independent slope correction buttons.	
7	Button: Lock the spray boom's balancing for transport.	
8	Button: Unlock the spray boom's balancing for spraying.	
9	Button: Unlock the vertically folded arms transport lock (HC).	
10	Button: Lock the transport lock for vertically folded arms (HC).	
11	Button: Move the independent slope correction automatically to the transport position.	
12	Raise the spray boom button (from version 1.12)	
13	Lower the spray boom button (from version 1.12)	

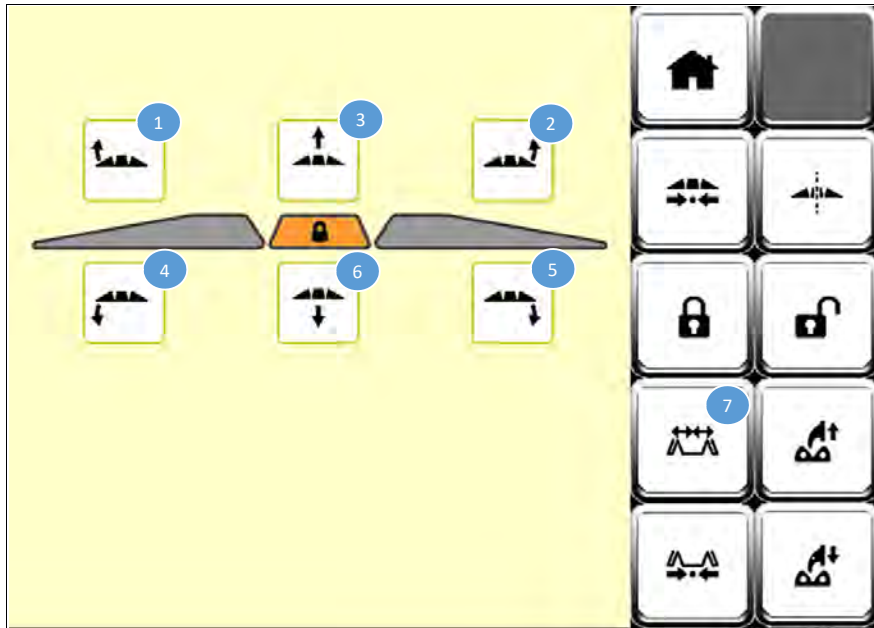
Slope correction sensors

Centre the independent slope correction sensors also in the following order if they are available:

- move the independent slope correction up if it's too low on the left or on the right.
- mid-slope correction
- lower the independent slope correction if it's too high on the left or on the right.

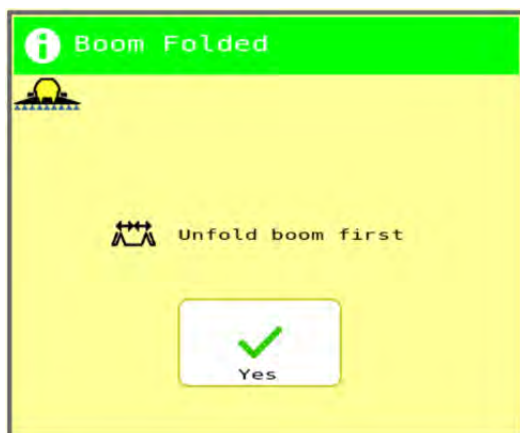
Folding

Folding 2 of 2



POS	Description	See page
1	Button: Lift the left side of the spray boom	
2	Button: Lift the right side of the spray boom	
3	Button: Lift the spray boom	
4	Button: Lower the left boom side	
5	Button: Lower the right boom side	
6	Button: Lower the spray boom	
7	Button: Switch with the fold buttons to the fold screen	

NOTE A warning appears when the boom is unfolded and an attempt is made to unlock the balancing.



Valve functions overview

Besides spray functions, the iXspray software supports a variety of other valve functions. It is possible, among other things, to fill, clean, empty the nozzle using these function. A detailed overview of the valve functions supported by iXspray can be found below. This overview aims to explain these functions and which screens are available for accessing them, provided that they are available on the sprayer in question.

Function	function to be accessed M(main display) L(ateral display)	Purpose of the function
Filling		
Set tank level	H	Option to set the tank level after filling. The function is only visible when the machine does not have an automatic level indicator. The flow meter calculates the volume decrease during draining.
Filling with pump	M and L	Using the suction hose connection to fill the main tank
Activate mix tank	Z	Activating the mix tank. Pumping the mix tank contents around activates the tank.
Dilute	M and L	Diluting the contents of the tank with water from the clean water tank
Filling + agitation	M and L	Using the suction hose connection to fill the main tank. The tank is stirred under high pressure for extra mixing during filling.
Fill sprayline	H	Fill the spraylines with spraying agent
Filling via manhole	Z	Fill the main tank through the manhole. This also activates the mix tank.
Fill via hydrant	Z	Use the hydrant connection to fill the main tank
Emptying		
Drain water tank	Z	Drain the clean water tank with the pump
Drain main tank	Z	Drain the main tank with the pump
Free drain	Z	Passively draining the main tank
Cleaning		
Machine cleaning	H	Cleaning the entire machine
Clean tank	M and L	Cleaning the main tank
Clean sprayline	H	Flushing the spraylines in the spray boom. Spraylines are sprayed empty of their contents.
Clean sprayline to tank	H	Flushing the spraylines in the spray boom. Most of the sprayline contents are pumped back into the tank. A small portion is then sprayed out.
Clean mix tank	Z	Rinsing the mix tank clean.
Clean filter	Z	Position the valves so that the filters can be detached.
Tank nozzles water	M and L	Rinses the main tank with water from the clean water tank using the tank nozzles
Tank nozzles chem	M and L	Soaks the main tank's walls via tank nozzles with water from the main tank itself.
Outside cleaning	Z	Activating the brush to clean the exterior of the machine.

Function	function to be accessed M(ain display) L(ateral display)	Purpose of the function
Other		
High-pressure agitator	M and L	Activating the high-pressure agitator.

iXclean or iXclean Comfort and Pro differ

The valves controlling these functions vary from partially manual to fully automatic depending on the sprayer model and iXclean options. iXspray supports the following iXclean variants:

- iXclean

Manual control is provided for both the suction and pressure sides of the liquid diagram. Tank levels can be measured mechanically or electronically.

- iXclean Comfort

The liquid diagram suction side is controlled automatically. The pressure side is controlled manually. The level measurement is always electronic.

- iXclean Pro

Full automatic control is provided on both the suction and pressure sides of the liquid diagram. The level measurement is always electronic.

Level measurement differences

Differences between the two types of tank level measurement.

- Electronic level measurement

The tank level is directly measured with a tank level sensor and displayed on the tractor screen and focus 3 control box.

- Mechanical level measurement:

The tank level is displayed on the machine by a mechanical indicator. The tractor screen also displays a tank level, but this level should be read from the mechanical level gauge after filling and then entered manually. By measuring the amount of liquid sprayed, the reduction in tank volume is tracked automatically.

Valve functions overview

In iXspray, valve functions are shown or hidden depending on the selected iXclean option and tank level measurement type.

√	These functions are available for the specified option.
---	---

Function	See page	iXclean without level sensor	iXclean with level sensor	iXclean Comfort	iXclean Pro
Filling	52				
Set tank level	58	√			
Filling with pump	59		√	√	√
Activate mix tank	60		√	√	√
Dilute	61	√	√	√	√
Filling + agitation	62	√	√	√	√
Fill sprayline	63	√	√	√	√
Filling via manhole	64		√	√	√
Fill via hydrant	65		√	√	√
Emptying	66				
Drain water tank	66		√	√	√
Drain main tank	68		√	√	√
Free drain	69		√	√	√
Cleaning	70				
Machine cleaning	74				√
Clean tank	75				√
Clean sprayline	76	√	√	√	√
Clean sprayline to tank	77	√	√	√	√
Clean mix tank	79		√	√	√
Clean filter	80		√	√	√
Tank nozzles water	81	√	√	√	√
Tank nozzles chem	82	√	√	√	√
Outside cleaning	83		√	√	√
Other	84				
High-pressure agitator	85	√	√	√	√

Valve functions overview

Starting and stopping a valve function

A valve function can be started using the main screen in the tractor cabin or the Focus 3 control box. Some functions can be started from both screens.

Starting and stopping a valve function via the main screen

- ▶ Choose the required category from the main screen. The "empty" category is not available from the main screen.



The functions within the selected category are displayed.



- ▶ Select the required valve function.



The selected function is displayed.



Start the chosen function with the "Play" button.



The selected function is started.



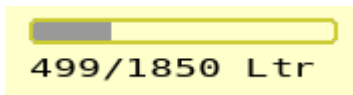
The process icon indicates that a function is active.



If the function is activated, the arrow colour indicating the flow of fluid changes from grey (inactive) to blue (active).

Most functions also display a progress bar when activated to indicate their progress. Depending on the function, progress is displayed in litres, seconds or steps.

Progress bar in litres



Some functions allow activating and deactivating the agitator during operation. The agitator button is shown after activating the function if this is possible.



► Press the agitator button to activate or deactivate the agitator during operation.

The function stops automatically upon completion. Prematurely stopping the function is also possible.

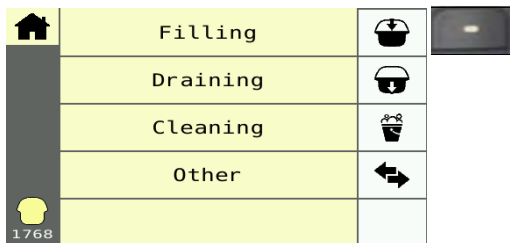


► Stop the function prematurely with the "Stop" button

Valve functions overview

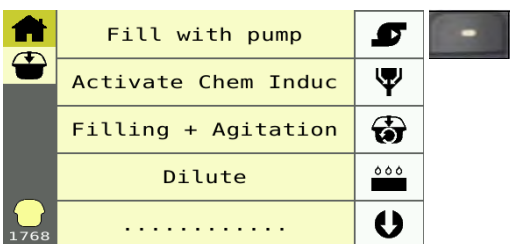
Starting and stopping the valve function via the Focus 3 control box

Starting and stopping a valve function on the Focus 3 works similarly to the main screen:



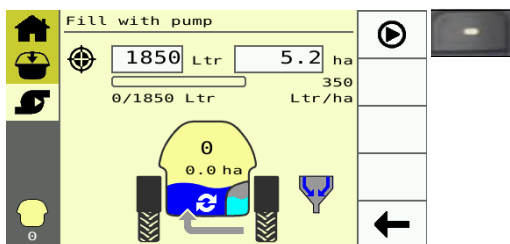
▶ Select the required category on the Focus 3 control box.

The functions within the selected category are displayed.



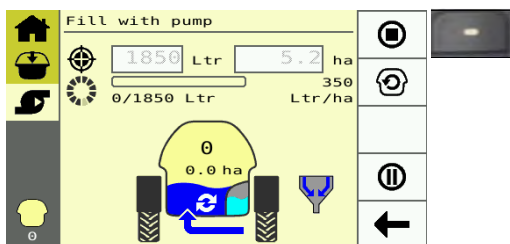
▶ Select the required valve function

The selected function is displayed.



▶ Start the chosen function with the "Play" button.

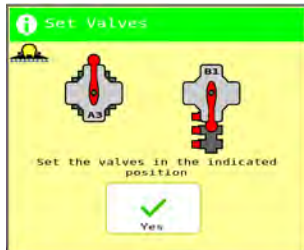
The selected function is started.



▶ Stop the function prematurely with the "Stop" button

Operation of manual valves with iXclean and iXclean comfort

It is necessary to operate (part of) the valves manually for the function to work correctly if the sprayer has the iXclean or iXclean comfort option. Upon selecting the function, a notification appears on the screen if manual operation is required:



iXclean



iXclean Comfort



If a notification appears, place the valves in the indicated positions and confirm the notification.

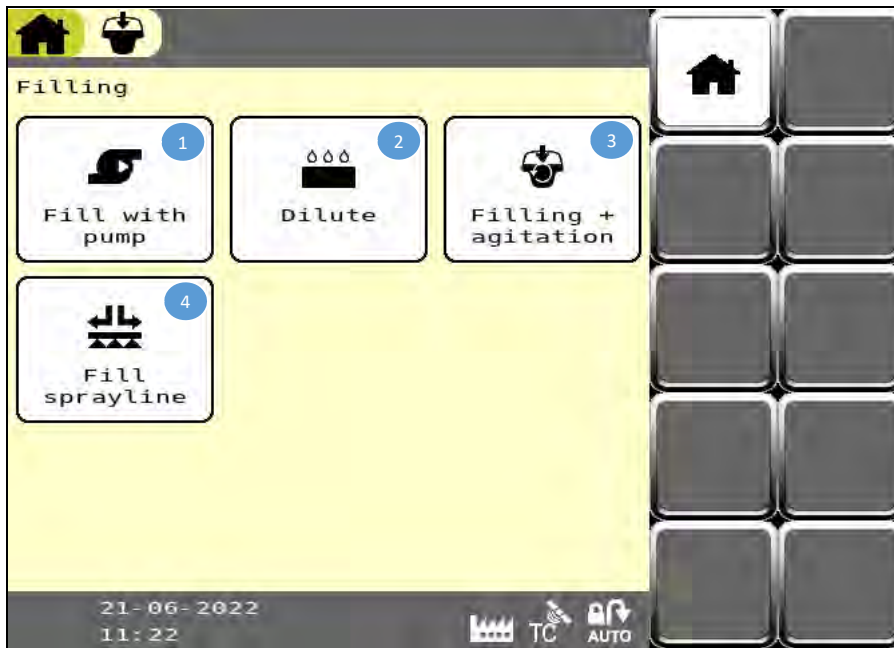


► Then press the "Play" button to start the function.

When the individual valve functions are explained in the following chapters, iXclean Pro will always be assumed, so notification screens are not shown in the explanations.

Filling

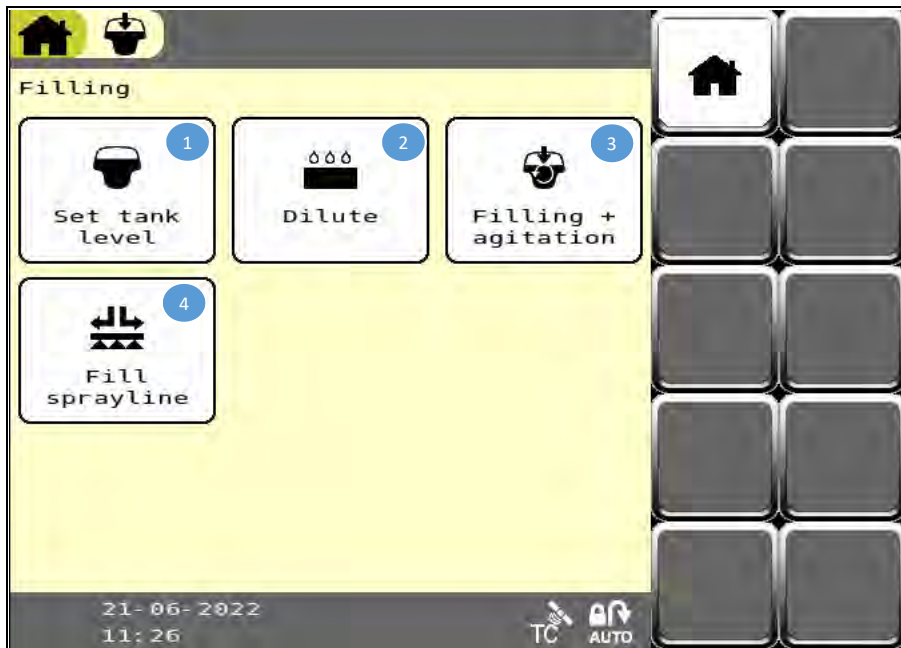
Fill 1 work screen



POS	Description	See page
1	Button: Fill with pump.	59
2	Button: Dilute.	61
3	Button: Filling and agitation.	62
4	Button: Fill sprayline.	63

Fill 2 work screen

This screen is only visible when the machine does not have an automatic level indicator.

















POS	Description	See page
1	Button: Set tank level.	58
2	Button: Dilute.	61
3	Button: Filling and agitation.	62
4	Button: Fill sprayline.	63

Filling

Fill Focus 3 work screen

Only the Focus 3 control box offers these screens.

	Fill with pump	 1
	Activate Chem Induc	 2
 203	Filling + Agitation	 3
	Dilute	 4
	 5
	 6
	Fill Hydrant	 7
 203	Fill via Manhole	 8

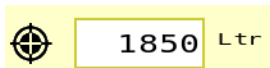
POS	Description	See page
1	Button: Fill with pump.	59
2	Button: Activate mix tank.	60
3	Button: Filling and agitation.	62
4	Button: Dilute.	61
5	Button: to next screen.	
6	Button: to previous screen.	
7	Button: Fill via hydrant.	65
8	Button: Fill via manhole.	64

Preparing for filling

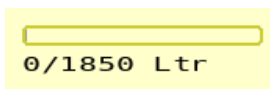
In the "fill" category, all valve functions are used to fill the main tank or to support the filling process. Depending on the valve function (for the operation of the individual functions, see page 48) selected, the machine can be filled differently, but filling in the desired fill level is always the same. It is possible to enter either the required fill level in litres or the number of hectares to be sprayed.

Adjusting the fill level in the different filling functions

Enter the fill level in litres

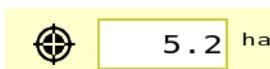


► Enter the required tank level.

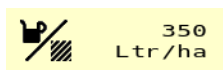


The left number below the progress bar indicates how many litres have been filled. Initially, this value is 0 and will increase during filling. The number on the right shows the total number of litres to be filled.

Enter the fill level in the number of hectares to be sprayed



► Enter the required number of hectares to be sprayed.



iXsray then calculates the number of litres to be filled based on the required application rate from the active pre-set. To adjust the application rate, see pre-sets chapter on page 87.

The hectare field will also change automatically when the tank level is adjusted in litres and vice versa.

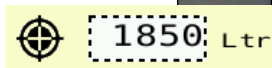
NOTE Adjusting the tank level while filling is not possible. The tank level cannot be adjusted, even if the filling process is paused.

Adjusting the fill level through the focus 3 control box

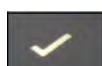
Setting the fill level on the focus 3 control box is done in the same way as using the main screen. The only difference is in the way input fields are adjusted.



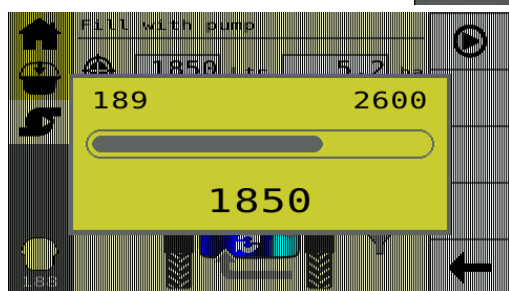
Use the arrow keys to navigate to the required input field.



A dotted border surrounds the selected input field. The litre field is preselected by default.



▶ Press the check mark to set the fill level.



The pop-up screen for setting the fill level opens.



Use the arrow keys to adjust the required fill level.



Confirm or cancel the adjustment.

The fill level can also be adjusted quickly without opening the pop-up screen.



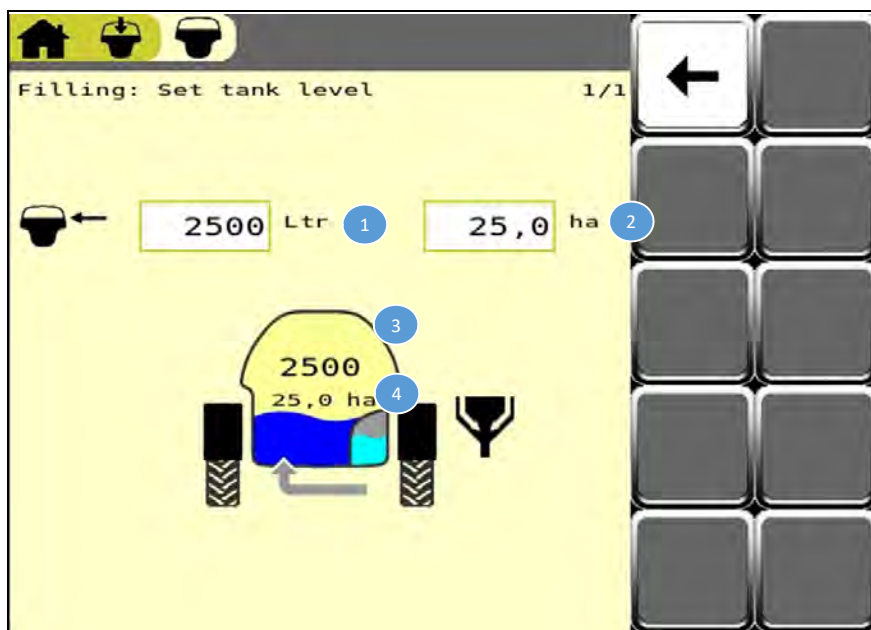
By pressing the F1 and F2 keys, you can directly increase or decrease the required tank level by 100 litres.

Acoustic signal when fill level is reached

When the required tank level is reached, iXclean and iXclean comfort require the valves to be manually reset to the spray position. In these cases, iXspray can emit an acoustic signal when approaching the target level. See chapter "User settings" on page 92 for setting this acoustic signal.

Set tank level

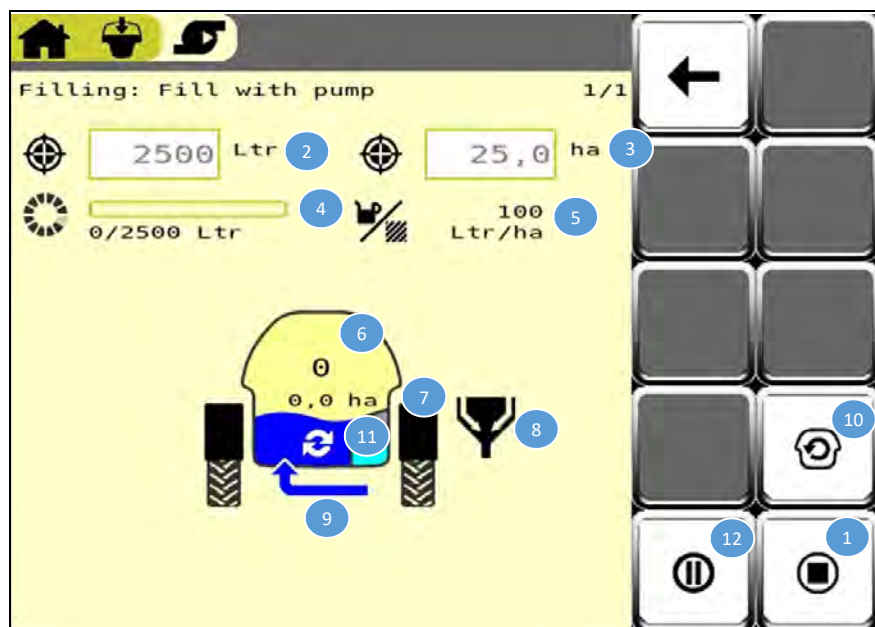
Option to set the tank level after filling. The function is only visible when the machine does not have an automatic level indicator. The flow meter calculates the volume decrease during draining.



POS	Description	See page
1	Sets the actual level of the main tank in litres. The tank level is lowered according to flow meter during spraying.	148
2	Sets the actual level of the main tank ha that can be sprayed based on the application rate of the active pre-set.	148
3	Displays current tank capacity in litres.	
4	Shows current ha that can be sprayed based on tank capacity and application rate of active pre-set.	

Filling with pump

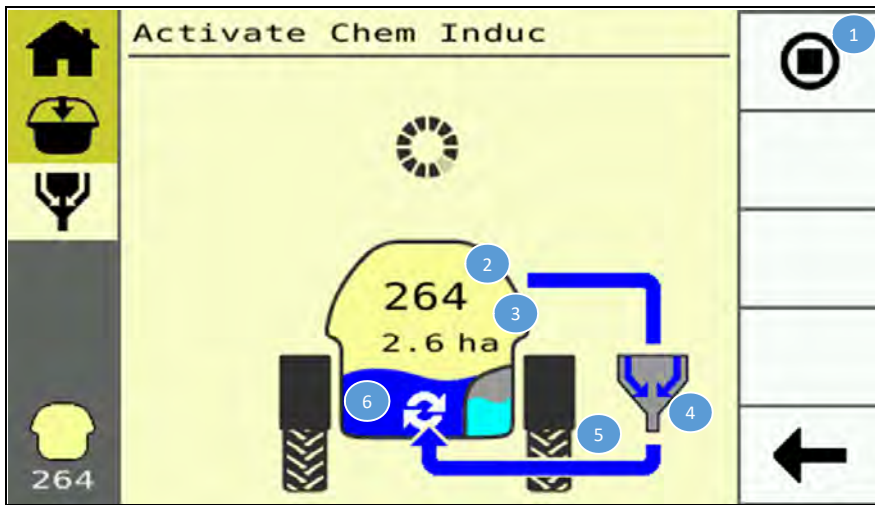
Using the suction hose connection to fill the main tank.



POS	Description	See page
1	Start/stop filling with pump button.	48
2	Sets the required level of the main tank in litres.	
3	Sets the target fill level of the main tank in ha that can be sprayed based on the application rate of the currently active pre-set.	
4	Displays the progress bar for tracking the filling process once it has started.	
5	Displays the application rate of the currently active pre-set.	
6	Displays current tank capacity in litres.	
7	Shows current ha that can be sprayed based on tank capacity and application rate of currently active pre-set.	
8	Indication that the mix tank can be used during the filling process.	
9	Fluid flow indication: from external source to main tank.	
10	Agitator on/off button.	
11	Shows that the agitator is switched on.	
12	This button pauses the filling process to allow more time for spraying agents to be added. The mix tank remains active during pause.	

Activate mix tank

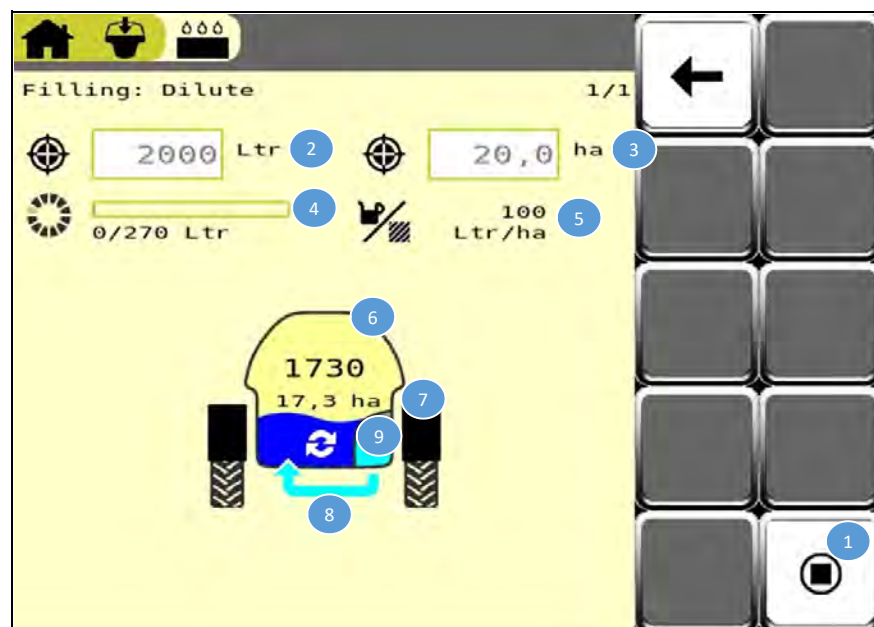
The mix tank is activated by this function, which pumps around the contents of the main tank to mix it with the mix tank. The function will also automatically turn on the agitator.



POS	Description	See page
1	Button: Start/stop function: Activate mix tank.	48
2	Displays current tank capacity in litres.	
3	Shows current ha that can be sprayed based on tank capacity and application rate of active pre-set.	
4	Shows that the mix tank is active.	
5	Displays fluid flow: from main tank through mix tank to main tank.	
6	Shows that the agitator is switched on.	

Dilute

The spraying agent can be diluted or supplemented with water from the clean water tank by using this function, if it is estimated that it is no longer sufficient for a field. To accomplish this, water is drawn from the clean water tank and passed through the agitator into the main tank until the required level is reached.

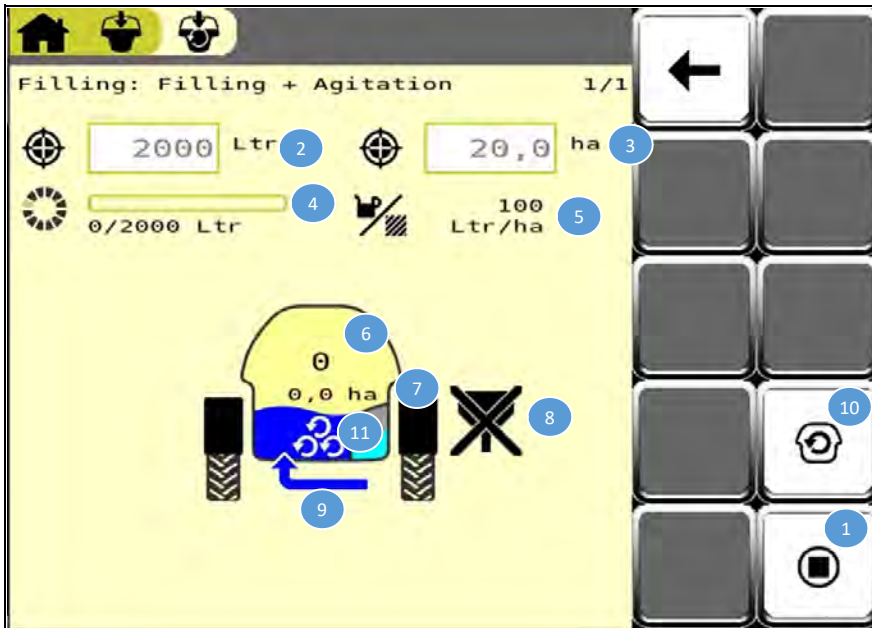


POS	Description	See page
1	Button: start/stop function: dilute.	48
2	Sets the target dilution level of the main tank in litres.	
3	Sets the required dilution level of the main tank ha that can be sprayed based on the application rate of the active pre-set.	
4	Progress bar for tracking the dilution process once started.	
5	Displays the application rate of the active pre-set.	
6	Displays current tank capacity in litres.	
7	Shows current ha that can be sprayed based on tank capacity and application rate of active pre-set.	
8	Displays fluid flow: from clean water tank to main tank.	
9	Shows that the agitator is switched on. Dilution always requires forced stirring. It cannot be disabled.	

Filling

Fill and agitate

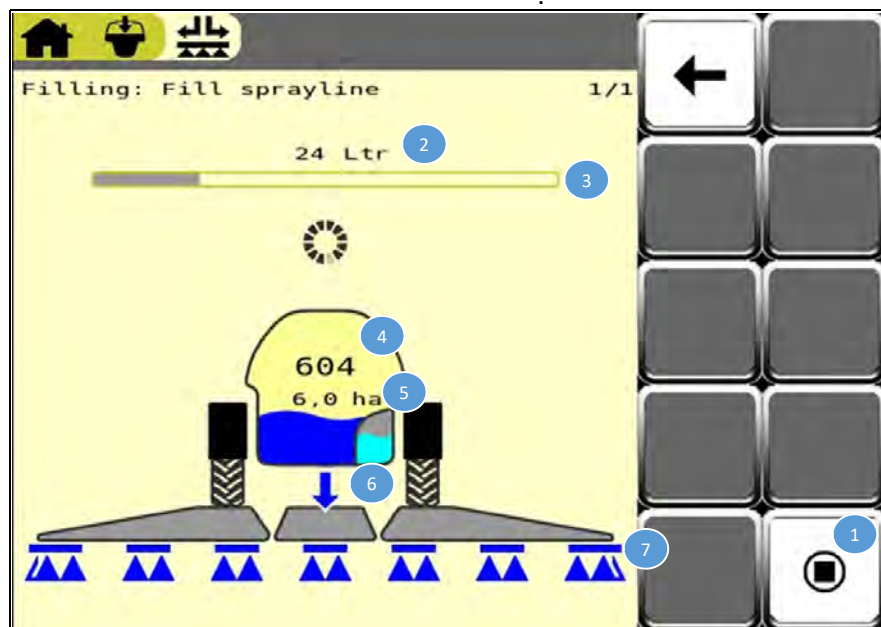
The function fills the main tank through the high-pressure agitator up to the target level.



POS	Description	See page
1	Button: start/stop function: filling and agitation.	48
2	Sets the required level of the main tank in litres.	
3	Sets the target main tank fill level in ha which can be sprayed based on the application rate of the active pre-set.	
4	Progress bar for tracking the filling process once it has started.	
5	Displays the application rate of the active pre-set.	
6	Displays current tank capacity in litres.	
7	Displays current ha that can be sprayed based on tank capacity and application rate of active pre-set.	
8	Indication that the mix tank cannot be used during the filling process.	
9	Fluid flow indication: from external source to main tank.	
10	Button: switch the agitator on/off.	
11	Shows that the high-pressure agitator is engaged. If both the high pressure and normal agitator are on the icon, alternation occurs.	

Fill sprayline

This function fills the chemical spray lines so that the machine immediately sprays chemicals when it is switched on. Filling the spray tank right up to the nozzles is a pre-set process. A fixed quantity of agent is allowed in all sections until all the clean water is pressed out of the section.



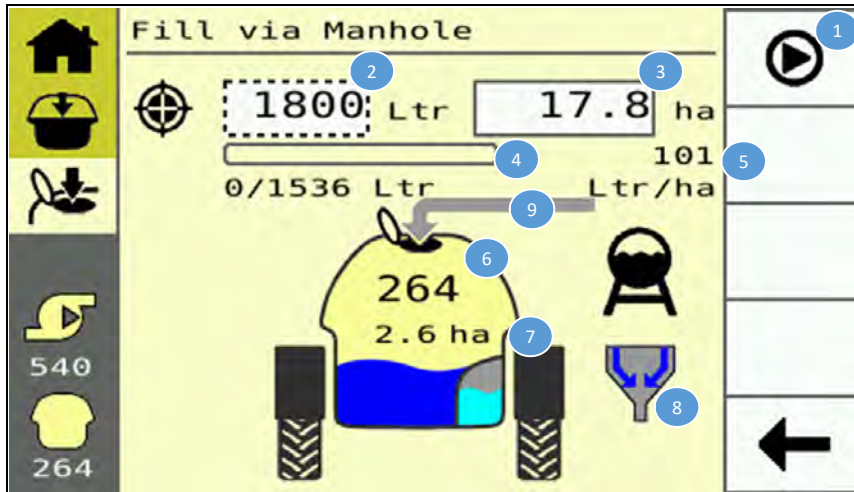
POS	Description	See page
1	Button: start/stop function: fill sprayline.	48
2	Indicates the amount of liquid used to deliver the chemicals to the spray nozzle. The contents of the tank replace the entire wet system.	
3	Progress bar for checking the filling process of the sprayline once it has started.	
4	Displays current tank capacity in litres.	
5	Shows current ha that can be sprayed based on tank capacity and application rate of active pre-set.	
6	Displays fluid flow: from main tank to spray boom.	
7	Displays the current status of the section.	

Filling

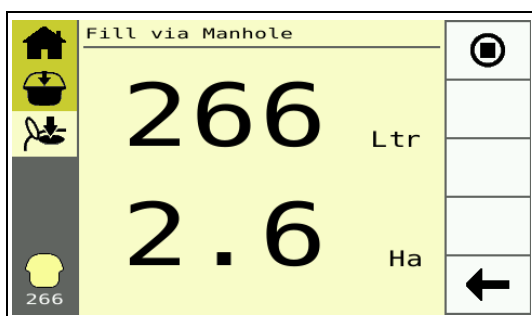
Filling via manhole

The function supports manual filling from the top of the tank. Activating the function allows you to do the following:

- The nozzle starts to draw from and back into the main tank, activating the mix tank functionality.
- The tank level is enlarged so you can see it from a distance.



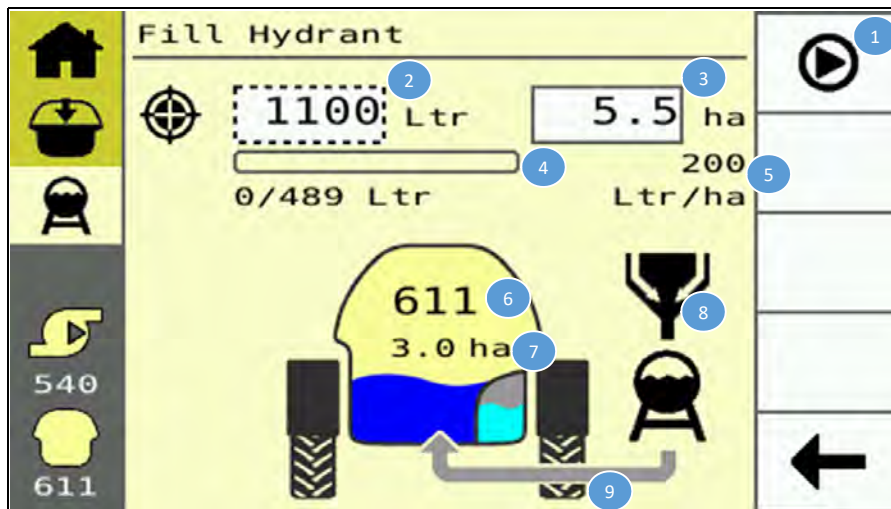
POS	Description	See page
1	Button: start/stop function: fill via manhole. The tank level is enlarged after start-up.	48
2	Sets the required level of the main tank in litres.	
3	Sets the target main tank fill level in ha which can be sprayed based on the application rate of the active pre-set.	
4	Progress bar for tracking the filling via manhole process once it has started.	
5	Displays the application rate of the active pre-set.	
6	Displays current tank capacity in litres.	
7	Shows current ha that can be sprayed based on tank capacity and application rate of active pre-set.	
8	Shows that the mix tank can be used during the filling process.	
9	Displays the fluid flow: from external source to main tank.	



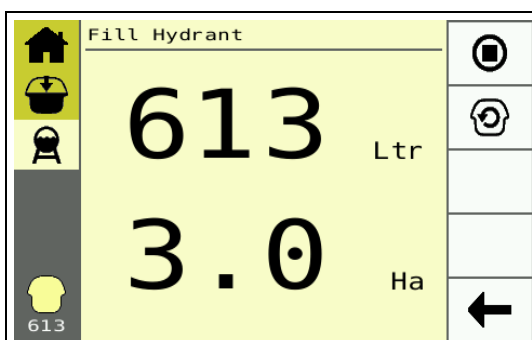
Fill via hydrant

The function draws water from the hydrant and pumps it into the main tank. Activating the function also allows you to do the following:

- The tank level is enlarged so you can see it from a distance.



POS	Description	See page
1	Button: start/stop function: fill via hydrant. The tank level is enlarged after start-up.	48
2	Sets the required level of the main tank in litres	
3	Sets the target main tank fill level in ha which can be sprayed based on the application rate of the active pre-set.	
4	Progress bar for tracking the filling via manhole process once it has started.	
5	Displays the application rate of the active pre-set.	
6	Displays current tank capacity in litres	
7	Shows current ha that can be sprayed based on tank capacity and application rate of active pre-set.	
8	Shows that the mixing tank can be used during the filling process	
9	Displays the fluid flow: from external source to main tank	



Emptying

Draining working screen

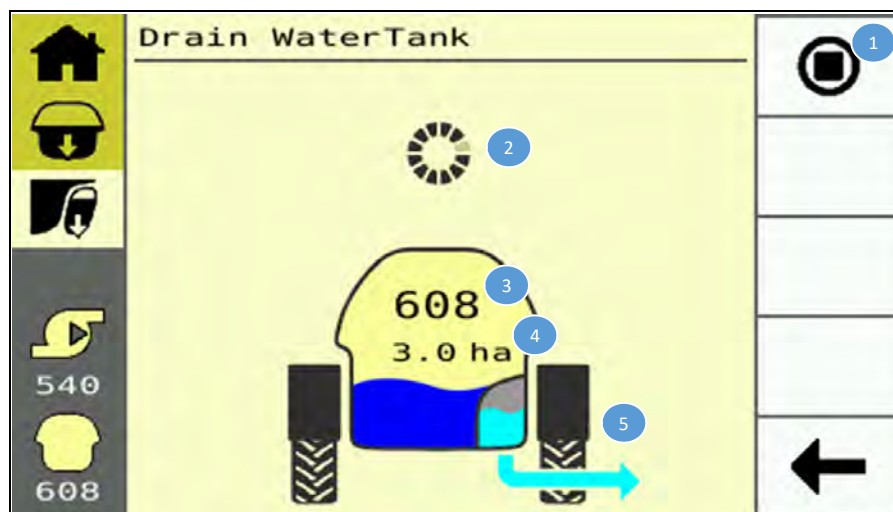
Only the Focus 3 control box offers this screen.



POS	Description	See page
1	Button: Drain water tank.	67
2	Button: Drain main tank.	68
3	Button: Free drain.	69

Drain water tank

The function drains the clean water tank via a remote connection to the pump.

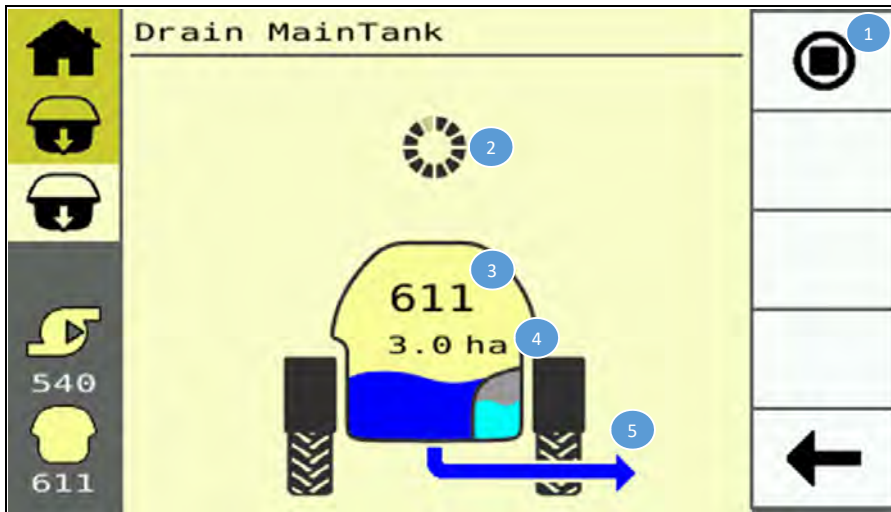


POS	Description	See page
1	Button: drain water tank start/stop function.	48
2	Displays that the process has started	
3	Displays current tank capacity in litres	
4	Shows current ha that can be sprayed based on tank capacity and application rate of active pre-set.	
5	Displays fluid flow: from clean water tank to drain.	

Emptying

Drain main tank

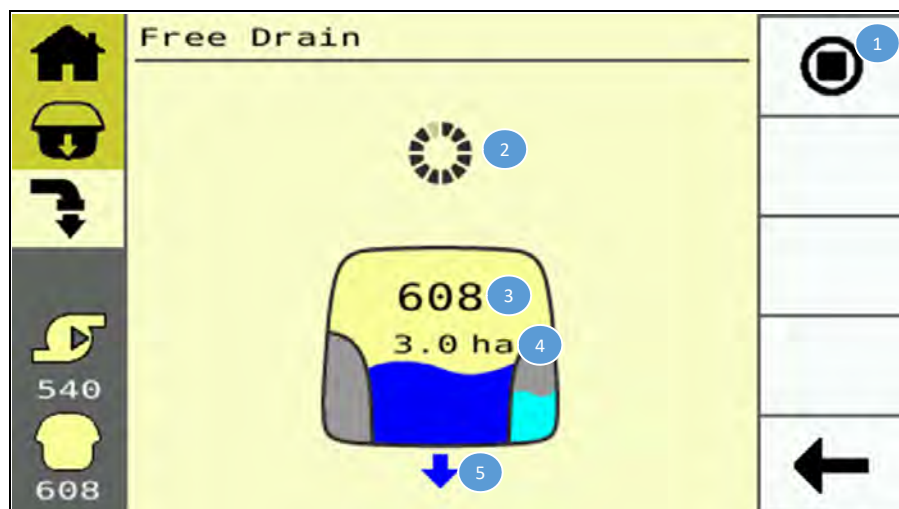
The function drains the main tank via a remote connection to the pump.



POS	Description	See page
1	Button: start/stop function: drain main tank.	48
2	Displays that the process has started.	
3	Displays current tank capacity in litres.	
4	Shows current ha that can be sprayed based on tank capacity and application rate of active pre-set.	
5	Displays fluid flow: from main tank to drain.	

Free drain

Using this function, the contents of the main tank are drained by gravity alone.



POS	Description	See page
1	Button: start/stop function: free drain.	48
2	Displays that the process has started.	
3	Displays current tank capacity in litres.	
4	Shows current ha that can be sprayed based on tank capacity and application rate of active pre-set.	
5	Displays fluid flow: from main tank to drain.	

Cleaning















Cleaning working screen



POS	Description	See page
1	Button: Complete cleaning. Cleaning program including spray boom (closes automatically)	74
2	Button: Clean tank. Short system cleaning without spray boom (closes automatically)	75
3	Button: Clean sprayline. Spray agent is pushed from the spray pipes with clean water.	76
4	Button: Clean sprayline to tank.	77
5	Button: Tank nozzles water. Cleaning the tank with clean water (fixed time).	81
6	Button: Tank nozzles chem. Cleaning with added cleaning agent from in the main tank (switching on/off).	82

Focus 3 cleaning working screen

Only the Focus 3 control box offers these screens.

	Clean Chem Induc	
	Clean Filter	
 203	Tank nozzles water	
	Tank nozzles chem	
	
	
	Clean tank	
 203	Outside Cleaning	

Cleaning

POS	Description	See page
1	Button: Clean mix tank.	79
2	Button: Clean filter.	80
3	Button: Tank nozzles water.	81
4	Button: Tank nozzles chem.	82
5	Button: to next screen.	
6	Button: to previous screen.	
7	Button: Clean tank.	75
8	Button: Outside cleaning.	83

General cleaning

Changing spraying agents

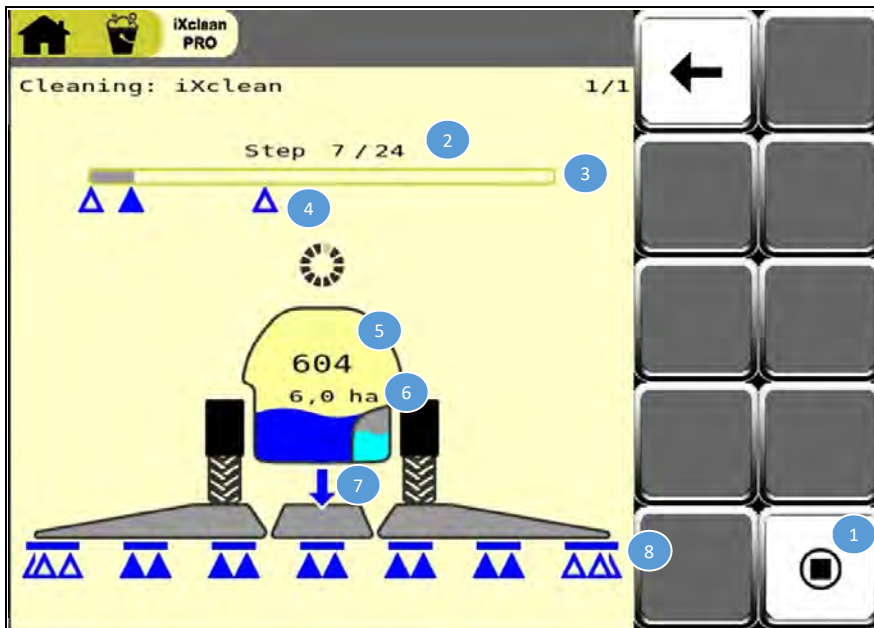
Clean when treating other cultures

It is essential to properly clean the entire sprayer on the inside after using different crops as the toleration of the substances used differs greatly from one another.

- X This is, for instance, the case if after treating grain with a growth regulator or herbicides that contain sulphonylurea, sprayings follow in sugar beet, corn or rapeseed.

Cleaning

Machine cleaning



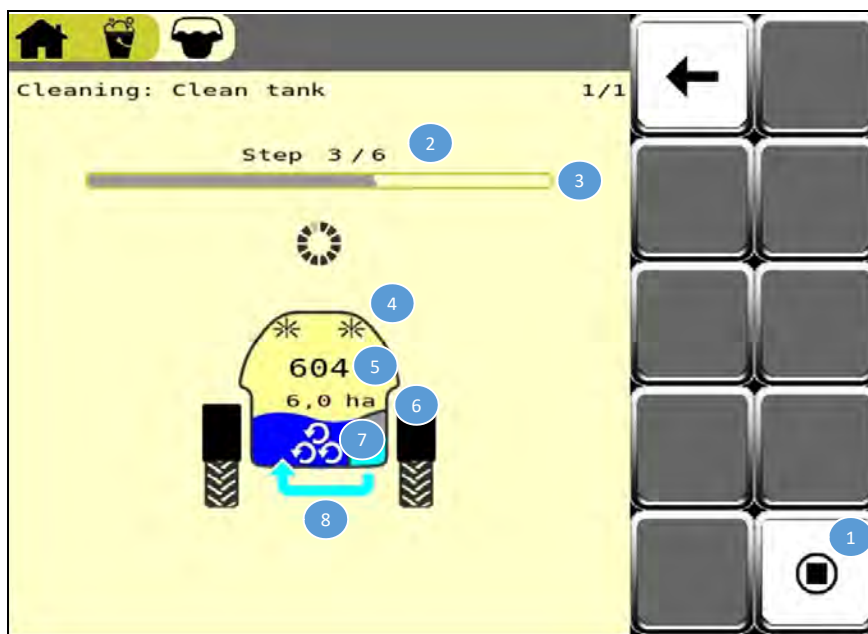
POS	Description	See page
1	Button: clean machine start/stop function. The function performs a comprehensive cleaning of the machine.	48
2	Displays the current active step and the total number of steps in the iXclean process.	
3	Progress bar for monitoring the iXclean process once started.	
4	Displays icons to indicate where in the iXclean process the spray nozzle starts spraying. Move the sprinkler during spraying actions. By doing this, the driver will be able to see when spraying is taking place.	
5	Displays current tank capacity in litres.	
6	Shows current ha that can be sprayed based on tank capacity and application rate of active pre-set.	
7	Displays fluid flow: from main tank to the spray boom.	
8	Displays the current status of the section.	27

Clean tank

The function carries out a cleaning procedure to clean the basic machine. Tank, high-pressure agitator, filling hose, regulator and tank nozzles are flushed. Water from the clean water tank is drawn during tank cleaning, and the inside walls of the tank are rinsed with the cleaning nozzles.

If the spraying is terminated when the main tank has been sprayed empty, the internal walls of the tank must be cleaned by using the “Clean tank” function. Water from the clean water tank is drawn for this purpose and delivered to the main tank via the tank cleaners. The superfluous water flows back in the pipeline via the tap and the return flow agitator.

- ▶ Spray the remaining diluted quantity over the field with the flow agitator switched off.

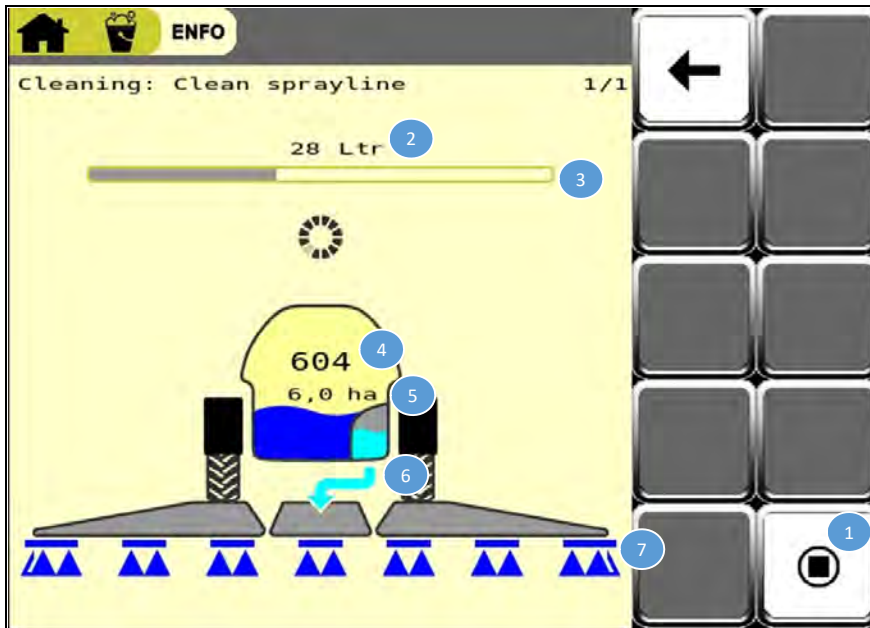


POS	Description	See page
1	Button: clean tank start/stop function.	48
2	Displays the active step and the total number of steps in the tank cleaning process.	
3	Progress bar for tracking the tank cleaning process once it has started.	
4	Indicates that the tank nozzles are on by displaying icons.	
5	Displays current tank capacity in litres.	
6	Shows current ha that can be sprayed based on tank capacity and application rate of active pre-set.	
7	Shows that the high-pressure agitator is engaged. If both high-pressure and normal agitation are on the icon, alternation occurs.	
8	Displays fluid flow: from clean water tank to main tank.	

Cleaning

Clean sprayline

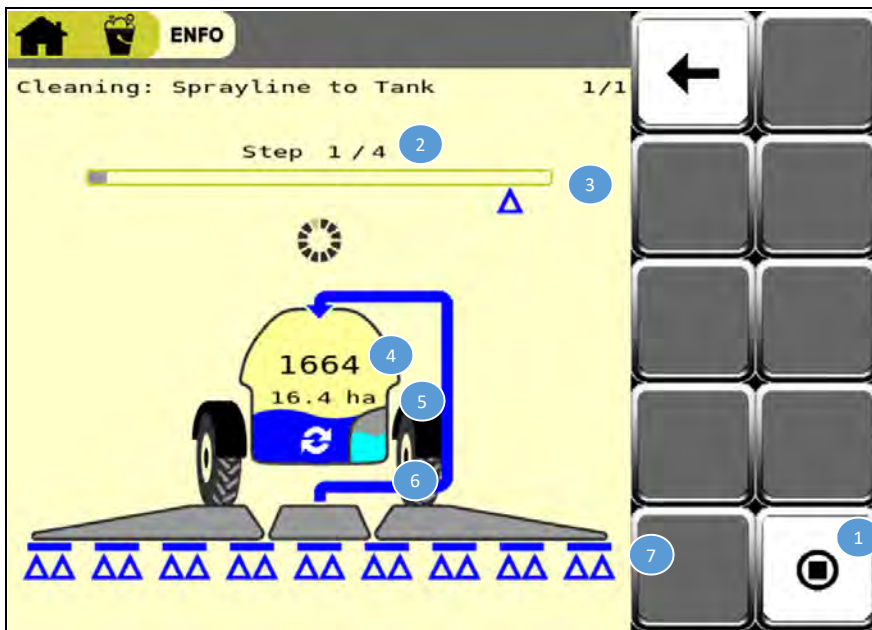
The function flushes the spraylines with water from the clean water tank. Spray boom contents are sprayed.



POS	Description	See page
1	Button: clean sprayline start/stop function.	48
2	Displays the amount of liquid sprayed to flush the spray boom The volume of the entire wet system is replaced using water from the clean water tank.	
3	Progress bar for checking the sprayline cleaning process once it has started.	
4	Displays current tank capacity in litres.	
5	Shows current ha that can be sprayed based on tank capacity and application rate of active pre-set.	
6	Displays fluid flow: from clean water tank to spray boom.	
7	Displays the current status of the section.	27

Clean sprayline to tank

The function flushes the spraylines with water from the clean water tank. Most of the spray boom contents are pumped back into the tank. Loop induction only (iXflow).



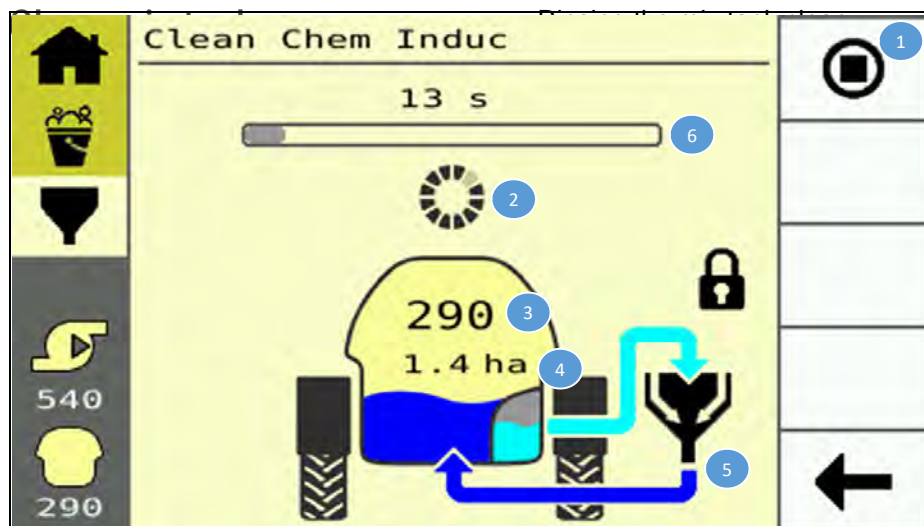
POS	Description	See page
1	Button: start/stop function: sprayline to tank.	48
2	Displays the amount of liquid sprayed to flush the spray boom The volume of the entire wet system is replaced using water from the clean water tank.	
3	Progress bar for checking the sprayline cleaning process once it has started.	
4	Displays current tank capacity in litres.	
5	Shows current ha that can be sprayed based on tank capacity and application rate of active pre-set.	
6	Displays fluid flow: from clean water tank to spray boom.	
7	Displays the current status of the section.	27

If the spraying is interrupted with the main tank partially filled, the "Rinse system" function allows targeted spraying of the spraying agent into the pipe system and spray line.

It uses the spraying agent optimally and prevents deposits in the line system.

The entire line system is filled/ flushed through with a minimum quantity of clean water. The section widths are switched off automatically at various moments, depending on the hose length of the supply pipeline.

NOTE: The rinsing process must take place during the drive and on an untreated part of the field, because the spraying agent in the pipeline is emitted with normal concentration.

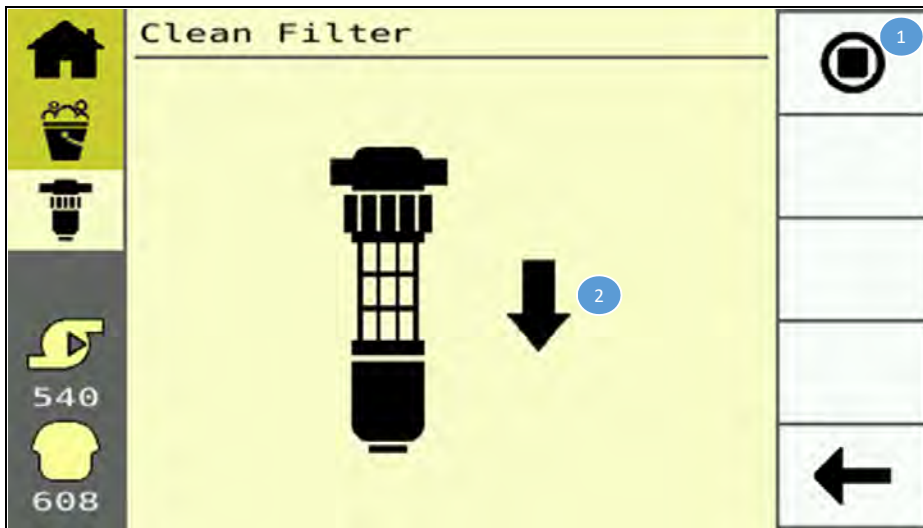


POS	Description	See page
1	Button: start/stop function: Clean mix tank.	48
2	Displays that the process has started.	
3	Displays current tank capacity in litres.	
4	Shows current ha that can be sprayed based on tank capacity and application rate of active pre-set.	
5	Displays fluid flow: from clean water tank through the mix tank to the main tank.	
6	Progress bar for monitoring the status of the cleaning mix tank process.	

Cleaning

Clean filter

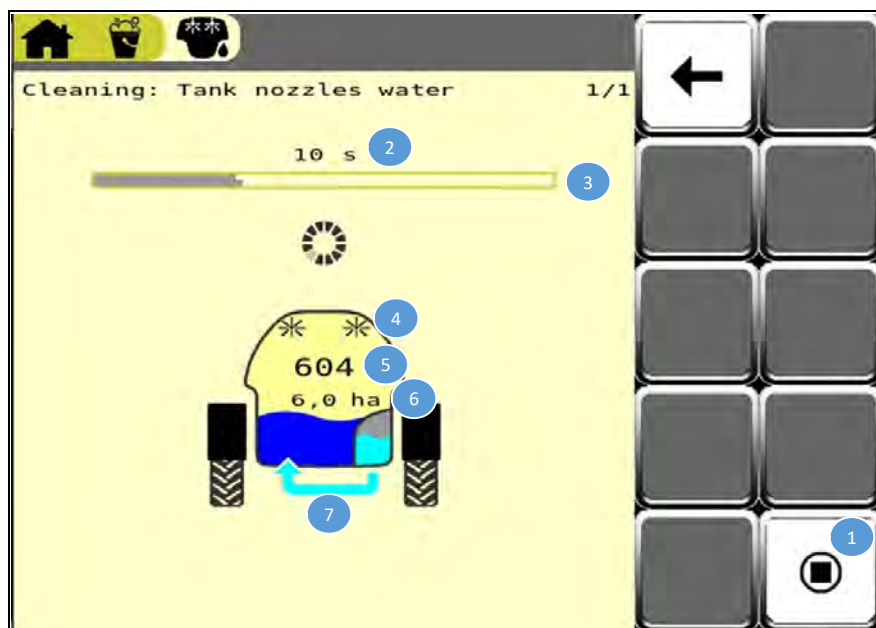
By using this function, the valves are moved into a safe position for removing the pressure and suction filters without draining the main tank.



POS	Description	See page
1	Button: start/stop function: Clean filter.	48
2	Indicates that the filter can be removed.	

Tank nozzles water

This function draws water from the clean water tank and pumps it through the tank nozzles.

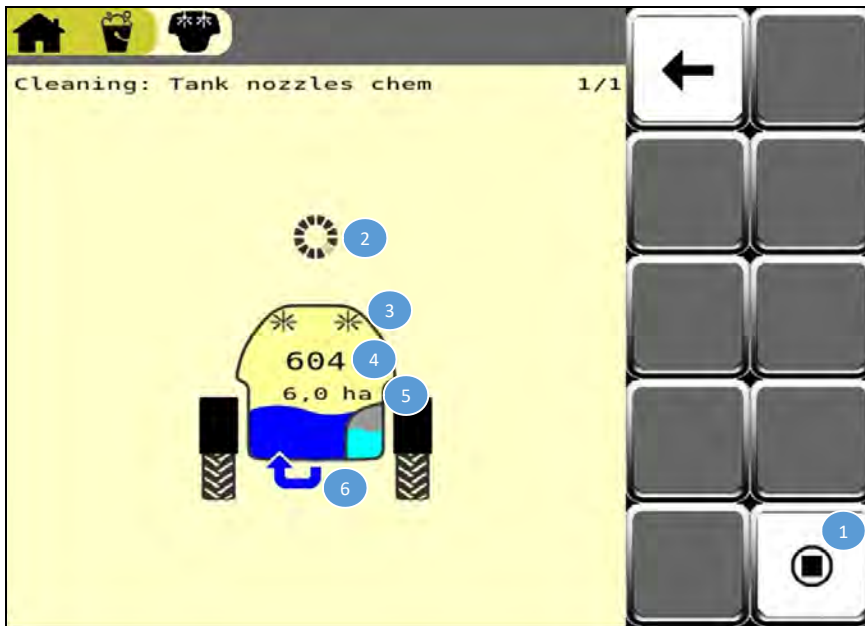


POS	Description	See page
1	Button: tank nozzles water start/stop function.	48
2	Displays how many seconds remain for the function to be active.	
3	Progress bar for controlling the water process of the tank nozzles once started.	
4	Indicates that the tank nozzles are on by displaying icons.	
5	Displays current tank capacity in litres.	
6	Shows current ha that can be sprayed based on tank capacity and application rate of active pre-set.	
7	Displays fluid flow: from clean water tank to main tank.	

Cleaning

Tank nozzles chem

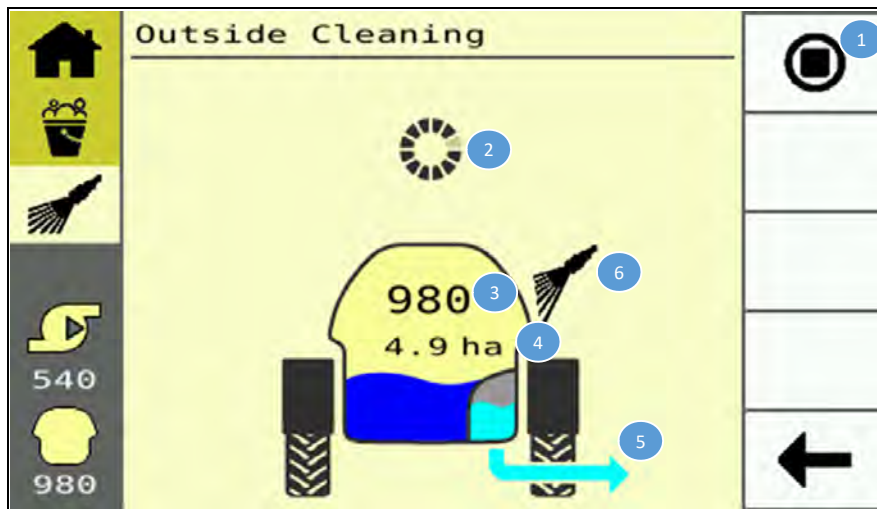
This function draws water from the main tank and pumps it through the tank nozzles to remove sediment. The function continues until it is stopped by the user.



POS	Description	See page
1	Button: tank nozzles chem. start/stop function.	48
2	Progress icon to indicate that the chemical process for tank nozzles is running.	
3	Indicates that the tank nozzles are on by displaying icons.	
4	Displays current tank capacity in litres.	
5	Shows current ha that can be sprayed based on tank capacity and application rate of active pre-set.	
6	Displays fluid flow: from main tank to main tank.	

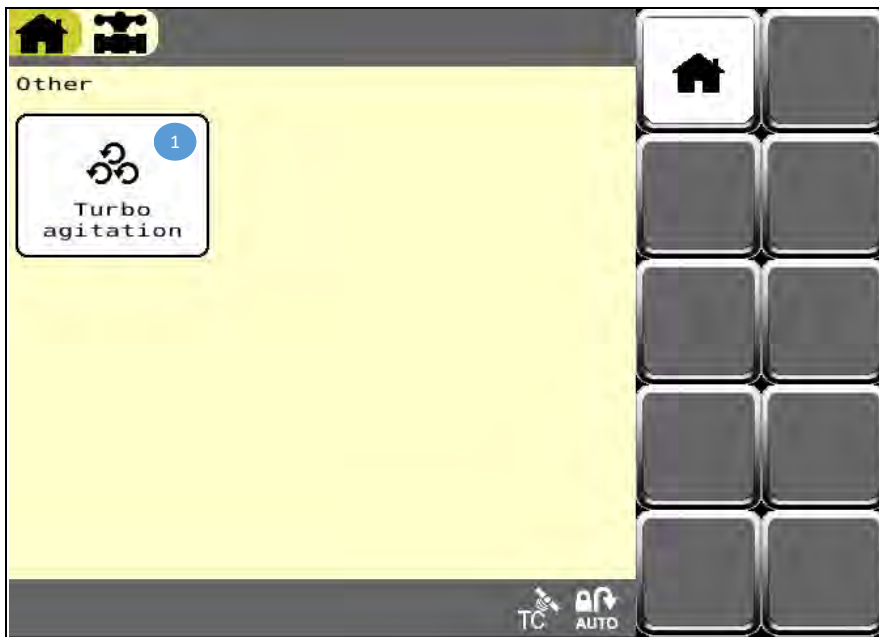
Outside cleaning

This function allows to draw water from the clean water tank and pump it to the external cleaning brush.



POS	Description	See page
1	Button: start/stop function: Outside cleaning.	48
2	Displays that the process has started.	
3	Displays current tank capacity in litres.	
4	Shows current ha that can be sprayed based on tank capacity and application rate of active pre-set.	
5	Displays fluid flow: from clean water tank to outside cleaning brush.	
6	Displays that the outside cleaning brush can be used.	

Other working screen



POS	Description	See page
1	Button: to high-pressure agitator screen. This opens the screen where the high-pressure agitator can be switched on and off.	85

High-pressure agitator

Draws water from the main tank and pumps it back into the main tank through the agitator nozzles. The function continues until it is stopped by the user.



POS	Description	See page
1	Button: start/stop high-pressure agitator.	85
2	Displays the progress icon for indicating that the agitation process is running.	
3	Displays current tank capacity in litres.	
4	Shows current ha that can be sprayed based on tank capacity and application rate of active pre-set.	
5	Shows that the high-pressure agitator is engaged. If both the high-pressure and normal agitator are on the icon, alternation occurs.	86
6	Displays fluid flow: from main tank to main tank.	
7	Button: switch agitator on/off.	

Agitator systems



Both active agitator systems are displayed alternatively:

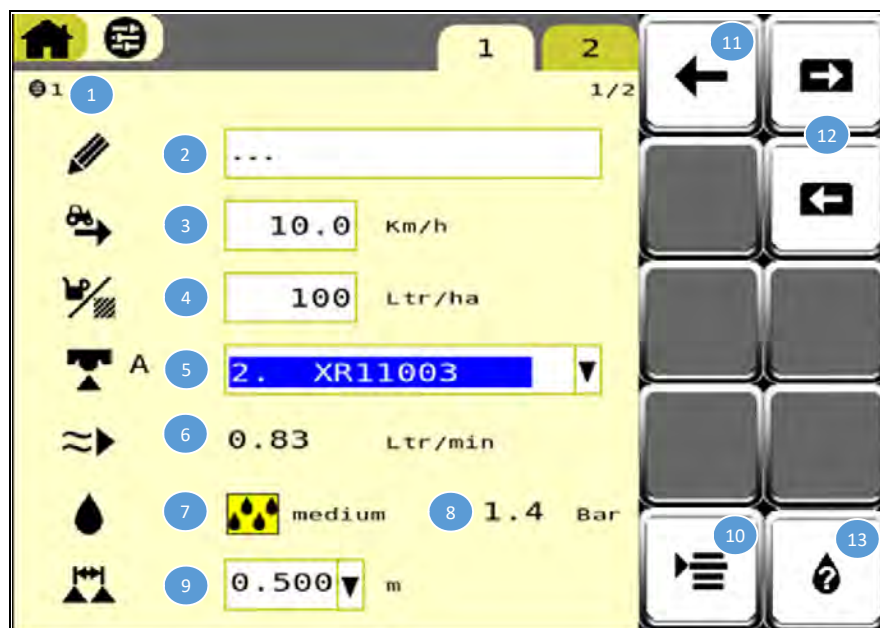
- The high pressure agitator with 3 symbols



- The standard agitator with a single symbol

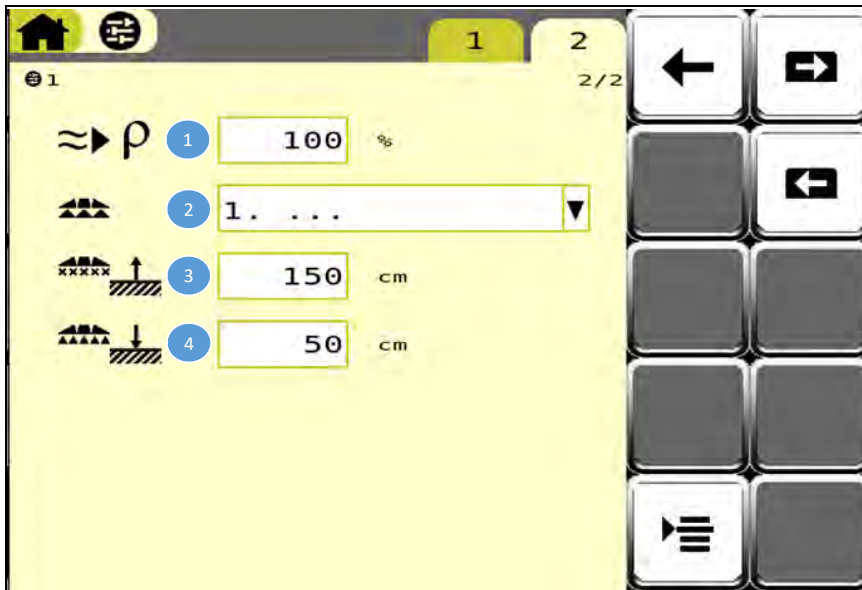
Pre-sets tab1

It is possible to pre-set all the data for a spray operation before starting by selecting "pre-sets". The predefined spray operations are then recorded in a list. You can reuse data from an existing pre-set or create a new one for subsequent spray operations.



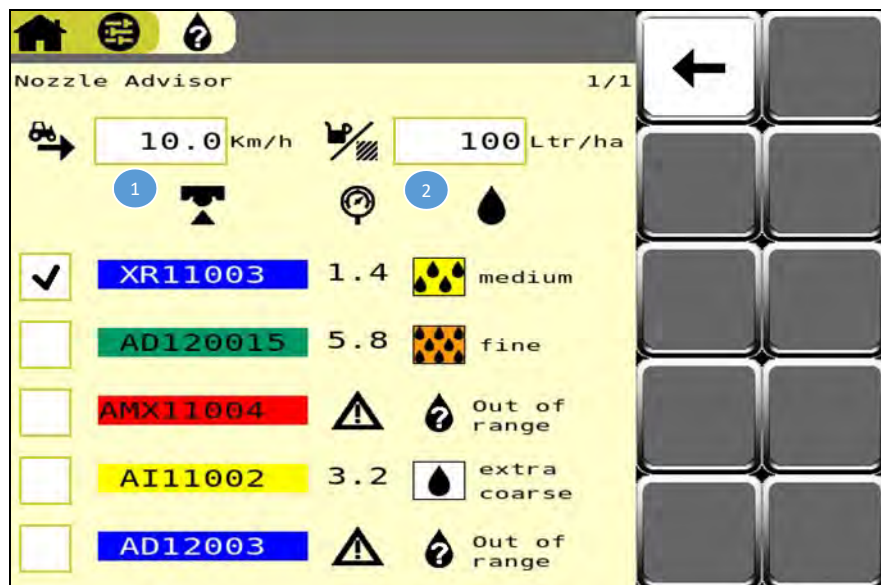
POS	Description	See page
1	Displays the selected pre-set number.	91
2	Displays pre-set name.	
3	Displays the set speed.	
4	Displays the set application rate.	
5	Displays the set spray nozzle selection.	
6	Displays volume flow per nozzle. Calculated value based on pre-set speed, nozzle and flowrate.	
7	Displays drop size with current settings. A warning icon appears when the pressure exceeds the selected nozzle's operating range.	
8	Displays the calculated pressure based on the current settings.	
9	[+] Displays the predefined nozzle spacing.	105
10	Button for accessing the pre-set list	91
11	Button: back one level (home screen)	
12	Buttons: next/previous tab	
13	Nozzle advice page button	89

Presets tab2



POS	Description	See page
1	Displays a compensation factor for spray fluids with a viscosity that differs from the standard to temporarily correct the flowrate.	
2	[+] Displays the predefined spray boom configuration.	105
3	Displays lifting height of spray boom during coverage of the headland.	90
4	Displays the spray height to the bottom during spraying.	90

Nozzle advice page



POS	Description	See page
1	Speed setting	
2	Yield setting	

At the selected speed and yield, the nozzle advice page shows each spray nozzle's pressure and drop size. The different spray nozzles can be adjusted by changing the speed and yield. You can select the required spray nozzle directly from the nozzle advice page.

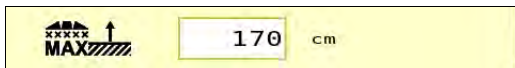
Spray and lifting height

The ERGODRIVE controls the spray boom from the set lifting height to the set spray height at the beginning of each new pass.

For correct operation, the spray and lifting height used by ERGODRIVE for turning on the headland must be set at each spraying based on:

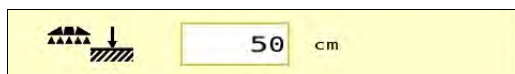
- Crop height.
- Field quality.
- Nozzle selection.
- Tyre rutting.

Tyre height and inflation pressure.



Lifting height

This setting defines the ERGODRIVE lifting height on the headland.



Spray height

This setting defines the ERGODRIVE spray height in the field.

A parallelogram sensor determines the ground distance on machines without Boomguides. Therefore, the target value corresponds to the distance between the nozzles and the ground.

Machines with Boomguide measure the distance to the crop directly, so the set value equals the distance.

Temporary volume flow correction via pre-sets

There may be a deviation in the application rate when spraying a liquid with a significantly different viscosity from the calibrated volume flow rate. This may be the case, for example, when spraying liquid fertiliser. The compensation factor in the pre-sets can be used to correct this temporary deviation.

- Reduce the correction factor when the measured application rate is too low
- Increase the correction factor when the measured application rate is too high

The correction factor is set to 100% (no correction) by default.

The volume flow meter must be recalibrated if it does not produce the same output for all liquids, including those with similar viscosities.

→ See "Procedure for calibrating the volumetric flow meter" on pagina 132.

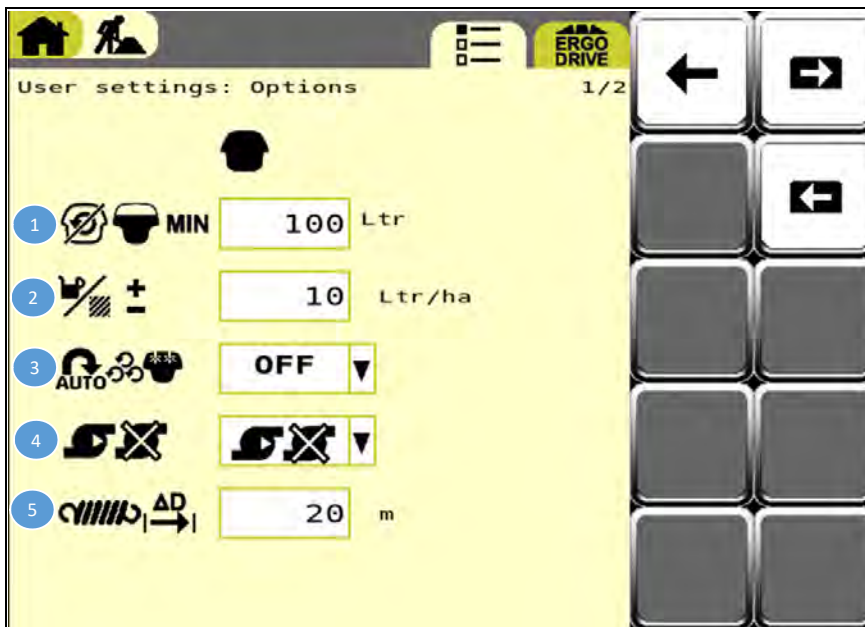
Select pre-set



POS	Description	See page
1	Displays pre-set number.	
2	Displays pre-set name.	
3	Displays pre-set speed.	
4	Displays pre-set application rate.	
5	Displays pre-set colour of the nozzle.	
6	Displays currently selected pre-set (grey) that is activated by pressing "9".	
7	Displays currently active pre-set.	
8	Buttons for changing the selected pre-set.	
9	Button for activating the selected pre-set.	

User settings

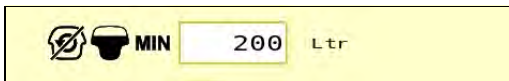
User settings options



POS	Description	See page
1	Displays the level for switching agitator system off.	93
2	Displays step increments for over- and underdosing.	93
3	[+] Displays the tank mode to be activated on the headland.	93
4	[+] Displays the pump mode.	93
5	[+] Displays the Headland Curve Assist base turning length.	93

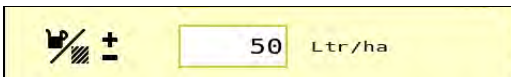
Set options

The first sheet displays the setting of:



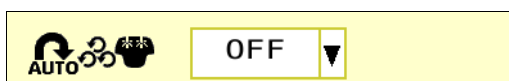
- **Level for switching agitator system off.**

Foaming is prevented by switching off stirring upon reaching this level. The tank volume also flashes and a beep sounds to indicate that the tank is almost empty.



- **Step increments for over- and underdosing.**

The step increments for over and underdosing can be set here.
→ See also page 31



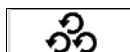
- **[+] Tank mode on the headland.**

If the machine is equipped with electric valves (iXclean Pro option), the pump outlet on the headland can be used for additional agitation capacity or tank cleaning outside of spraying.



Off.

the pump capacity is not actively used on the headland for other functions.



High-pressure agitator.

The high-pressure agitator is activated on the headland to agitate the mixture further.



Tank nozzles.

The tank contents are pumped around through the tank nozzles on the headland. This ensures that the walls of the tank remain moist, preventing the spraying agent from drying out.



- **[+] Switching on or off second pump compartment.**

You can choose to spray with one or two pump compartments if the machine has a pump with two compartments. The lower volume flow should be sprayed with 1 pump chamber. Spraying should be done with two pump chambers with a medium to high volume flow. It is also possible to automatically switch the correct number of pump compartments based on the required application rate.



Both pump compartments are engaged.

The entire pump output is regulated by the control. The control can deliver doses up to its maximum values.



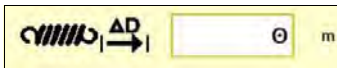
The second pump compartment is excluded from control.

The output of this pump is no longer led to the control.



Automatic switching.

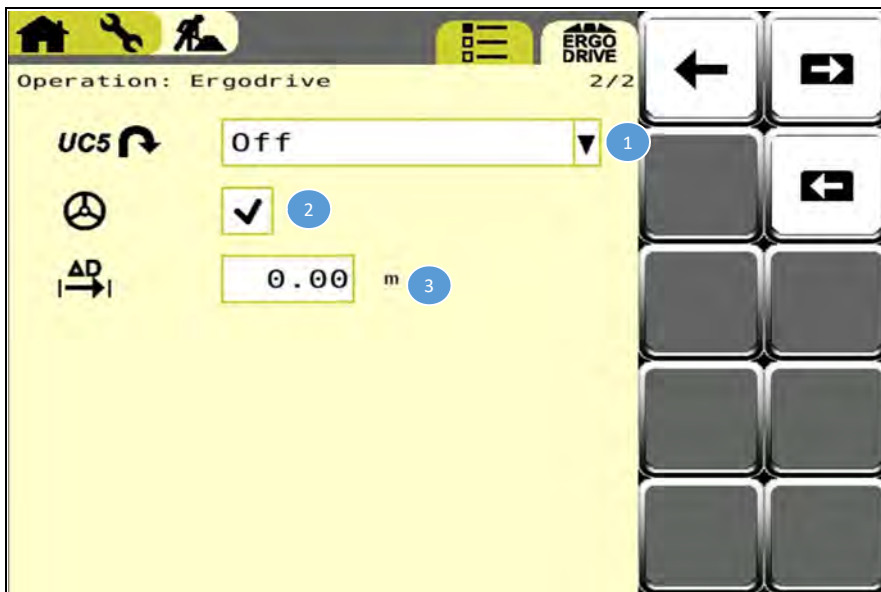
Automatic switching between 1 or 2 pump compartments. With this option, the second pump compartment turns on automatically when the first compartment cannot meet the required demand.



[+] Headland Curve Assist base turning length.

The balancing is set to the field position when Headland Curve Assist is used and spraying begins. This parameter determines how many meters remain before the balancing switches to the field position after spraying has begun.

[+] ERGODRIVE user settings

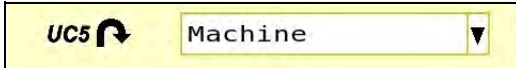


POS	Description	See page
1	Displays the Boomguide mode on the headland.	96
2	Activates the ERGODRIVE option to also switch automatically to the correct steering mode.	96
3	Displays the base turning length. Delay distance between ERGODRIVE actions when the nozzle is turned on.	97

User settings

[+] **Boomguide use on the headland** The ERGODRIVE system interrupts the (optional) Boomguide function while turning on the headland.

If the spray boom has too much movement while turning, the Boomguide can also be switched on at the headland.



Boomguide mode

The ERGODRIVE function can control the Boomguide function on the headland when ERGODRIVE and Boomguide are used simultaneously. The ERGODRIVE can control the Boomguide function in several ways using the Boomguide headland setting.

Machine

Machine:

The spray boom is raised to headland height on the headland. The boom height control on Boomguide remains active.

This setting allows the iXspray software to perform the actions. The "Headland Assist" headland management system in the Boomguide software itself must therefore be disabled. To deactivate the headland management system:

→ See the Boomguide instruction manual.

UC5

UC5:

The spray boom is raised to headland height on the headland. The boom height control on Boomguide does not remain active.

If this setting is selected, the actions will be executed by Boomguide instead of iXspray. The "Headland Assist" headland management system in the Boomguide software itself must therefore be enabled. To activate the headland management system:

→ See the Boomguide instruction manual.

Off

Off:

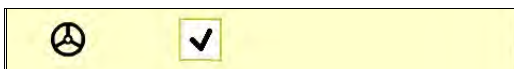
The Boomguide system on the headland is not controlled by ERGODRIVE. The boomguide remains active while the spray boom is still at spray height.

-

Rutting on the field

- TIP**
- You can correct the tracking depth best on the field and at half tank.
 - Check the tyre pressure regularly.

Tracking by ERGODRIVE



In addition to automatically raising and lowering the boom, the ERGODRIVE system can switch automatically to the correct steering mode upon entering and leaving the headland.

Activating this setting will enable tracking on headlands. Upon leaving the headland, tracking is switched off, and the wheels are in the central position again.

Turning-in length after which spraying starts

Change the turning length

To connect the spraying on the headland, the ERGODRIVE should always begin the spraying at the same place.

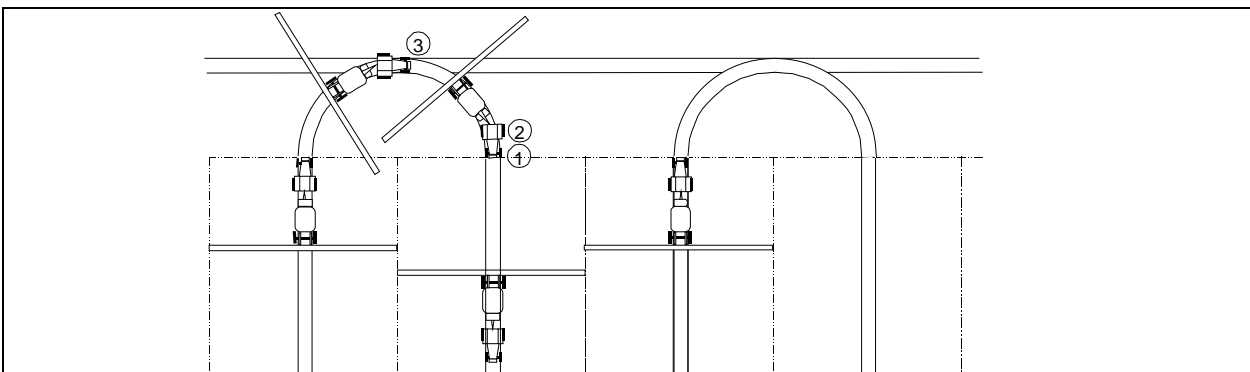
This is to avoid not spraying or double spraying at some locations. This point is however far behind and is not so easy to estimate. A good guide is the front wheels of your tractor.



If you connect the central switch "Spray" to a fixed point with respect to your tractor front wheel, that is a good guide point.

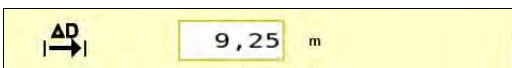
A number of examples for chosen "guides":

- When passing the visible headland boundary (1).
- the moment your front wheels are straight again after turning (2).
- If the front wheels turn out of the headland track (3).



- ▶ Determine from the chosen point the distance to be driven until the spray boom reaches the beginning of the working passage.

TIP Measure the distance driven with your control box.



- ▶ Enter this base turn length.
Here 9.25 metres.

The ERGODRIVE will measure the traversed path where the spraying must start.

Job reports

Task report

The spray activities performed are to be saved per field and can be queried.

If the "Connect to an external task controller" option is selected, it is assumed that task reporting is also accomplished via an external task controller. The task report screen will be hidden in this case.

→ See "Task Controller Setup" op pagina 113.



POS	Description	See page
1	Displays date and time when the task report was started.	
2	Displays the sprayed surface while the task was active.	
3	Displays the sprayed litres while the task was active.	
4	Displays the distance covered while spraying and while the task was active.	
5	Displays the total spray time while the task was active.	
6	Displays the total distance covered without spraying and with active task.	
7	Displays the total time without spraying and with active task.	
8	Button: go to list of task reports.	99
9	Button: clear current task.	

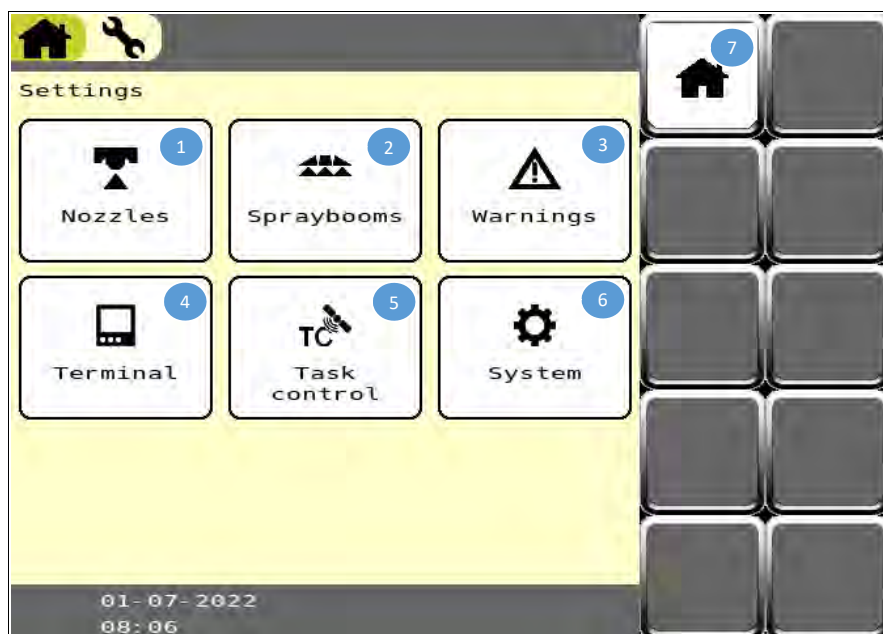
Task reports list



POS	Description	See page
1	Displays task report number.	
2	Displays the date and time when the task report started.	
3	Displays the sprayed surface while the task was active.	
4	Displays the currently selected task report that is activated by pressing button "7".	
5	Displays the currently active task report.	
6	Buttons for scrolling through the list.	
7	Button: activate selected task report.	

Settings

Settings work screen



POS	Description	See page
1	Spray nozzles button.	101
2	[+] spray boom configurations button.	105
3	Warnings button.	110
4	Terminal button.	112
5	Task Controller button.	113
6	System button.	123
7	Back to the main screen button.	20

Jet nozzles

The “Nozzles” screen displays the machine's nozzles. It is also necessary to adjust the software when a new type of nozzle is fitted to the machine. All nozzle data has already been prefilled in the iXspray software's nozzle library. It is also possible to create a nozzle that does not appear in the library and then add all the data yourself. The number of spray nozzles available at one time is limited to five.



POS	Description	See page
1	Displays an overview of the spray nozzles available on this machine.	

There are two ways to choose a nozzle.

- One from the library or one to be created from scratch.



- ▶ Select a nozzle to view or adjust nozzle data.

Settings

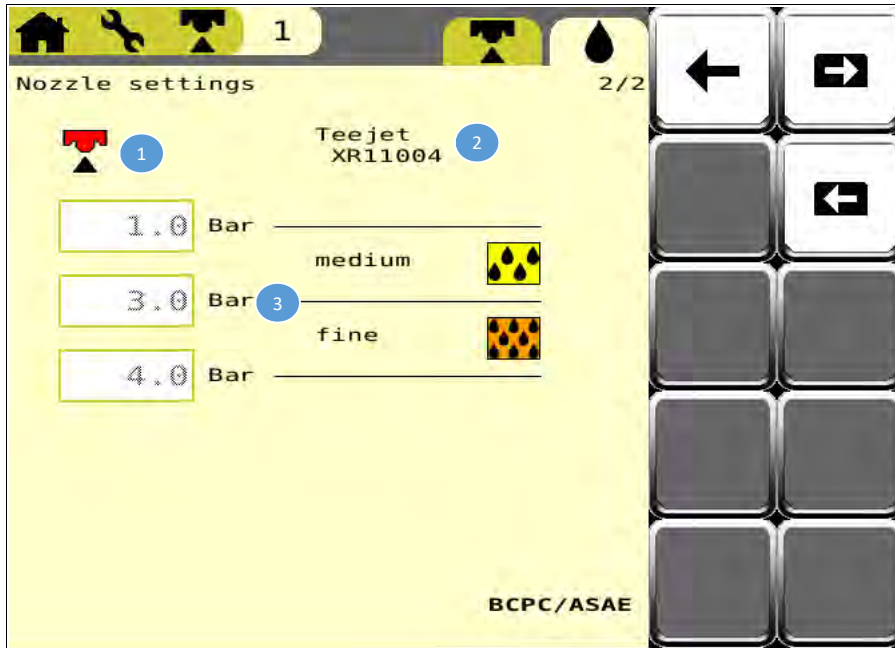
Library of nozzle settings1



POS	Description	See page
1	Displays the nozzle brand.	103
2	Displays the nozzle model.	103
3	Displays the nozzle size.	103
4	Displays the reference pressure and volume flow rate of the nozzle as specified by the nozzle supplier. Example: this nozzle sprays 0.91 litres per minute at 1 bar.	103
5	Displays the working range of the nozzle as specified by the nozzle supplier.	103

Library of nozzle settings2

The spraying pressure and drop size ratio is displayed here.
 When this nozzle is active, the spray screen displays the colours of the different drop size ranges.
 → See “Drop size” op pagina 32.



POS	Description	See page
1	Displays the nozzle colour.	
2	Displays the nozzle brand.	
3	Displays the drop sizes for the different pressure ranges.	

Settings

Choosing nozzles from the library

When you select a nozzle in the nozzle screen, the first “Nozzle settings” screen opens displaying the data of the selected nozzle.

- ▶ Select a brand.

The screen shows all brands of nozzles.



- ▶ Select a model.

The screen displays all spray nozzle models within the chosen brand.

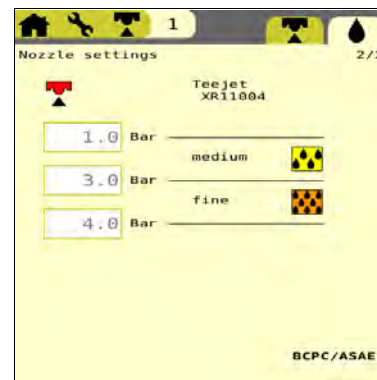


- ▶ Select a size.

The screen displays all spray nozzle sizes within the chosen brand.



The screen shows the nozzle selection (example).

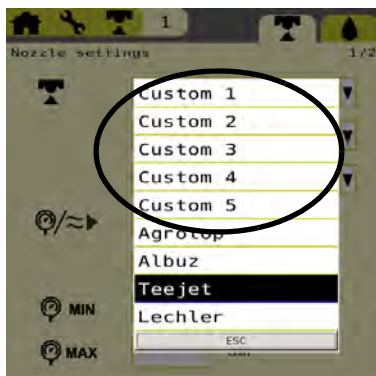


Create new nozzle

For nozzles not found in the library, these can be created by the user.

Screen 1/2

- ▶ Choose one of the five adjustable spray nozzles under the nozzle brand.



- ▶ The new nozzle can then be given a name and its data entered.



- ▶ Scroll to sheet 2



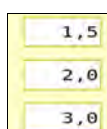
Screen 2/2



It is possible to increase or decrease the number of drop size ranges using the - and + icons.



The correct drop size ranges can be selected with the arrow keys.



The drop size range limits can be specified in these fields. The minimum and maximum pressure cannot be set on this page. These are carried over from the first screen.

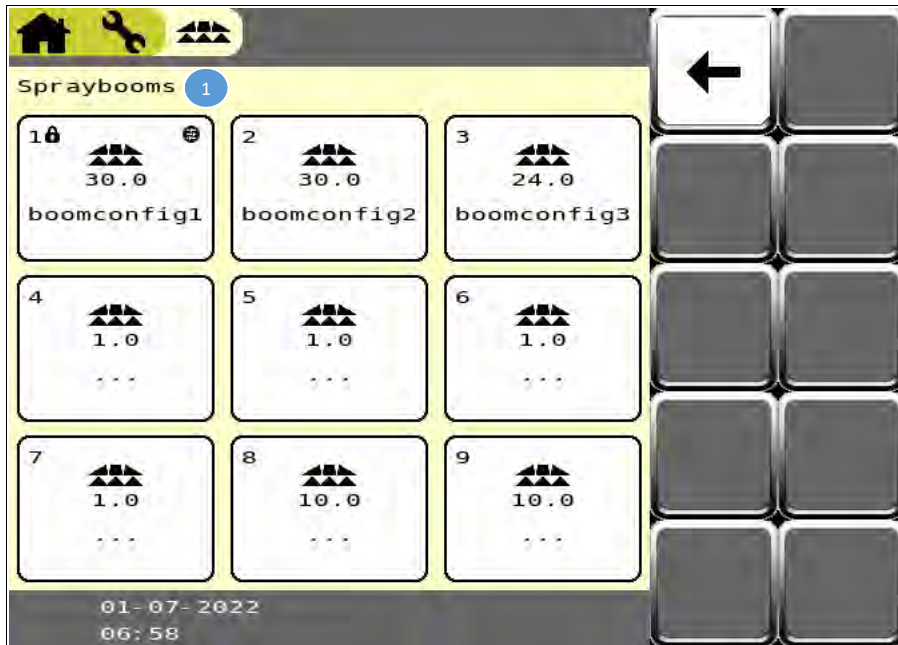
[+] Individual nozzle-shutoff valve spray boom settings

To make optimum use of this functionality it is possible to store 9 pre-defined booms in the "spray boom configurations". The section distribution/boom width and any unused nozzles are fixed in a spray boom configuration.

Based on the order, configuration 1 is set by the factory.
The other configurations can be freely modified by the user.

Adjust a spray boom configuration

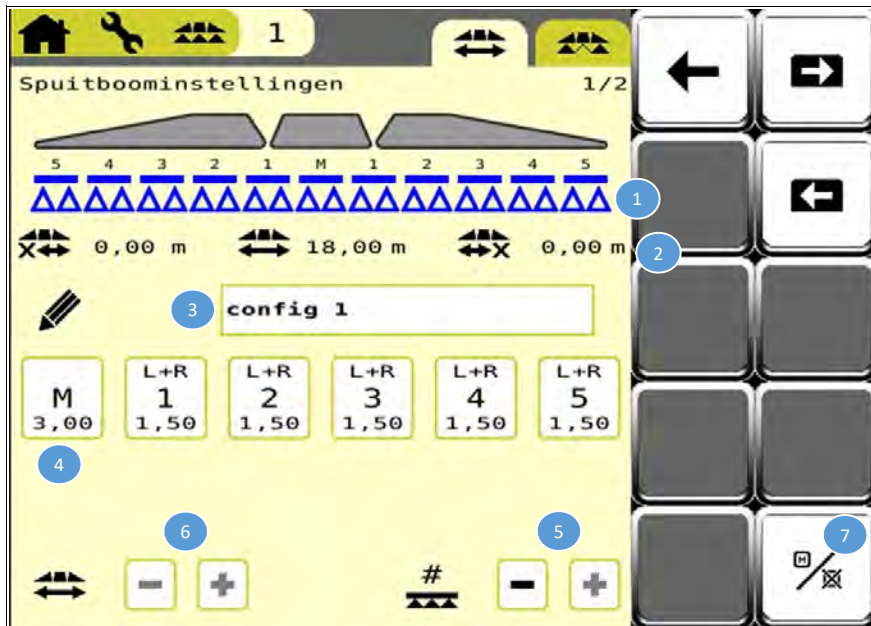
When a spray boom configuration is selected, it can be adjusted.



POS	Description	See page
1	Displays screen with 9 spray boom configurations.	107

Spray boom settings 1

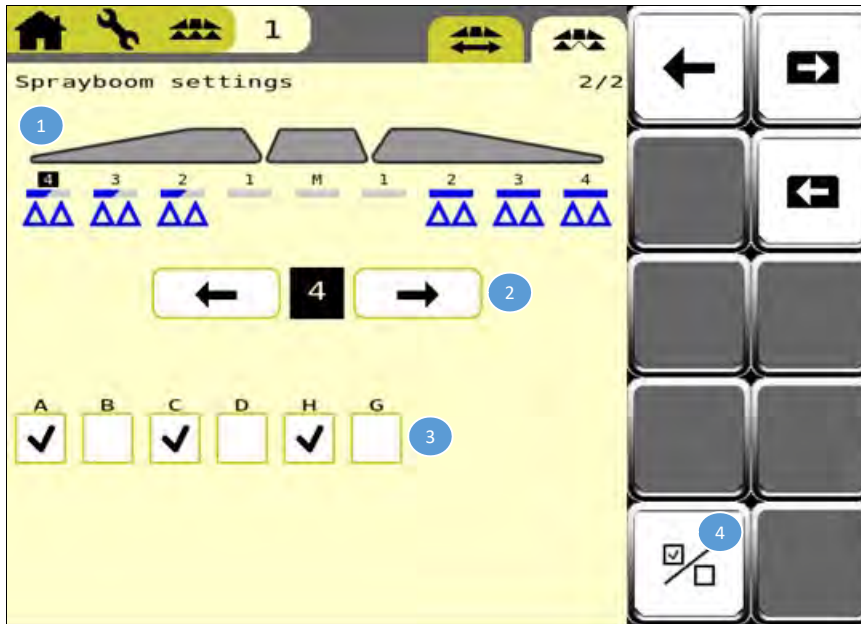
With individual nozzle shutoff valves it is possible to quickly adjust the spray boom size and section layout. It is not necessary to physically adjust anything to the syringe.



POS	Description	See page
1	Displays the current number of sections for this spray boom configuration.	
2	Displays the currently used and unused boom width in this spray boom configuration.	
3	Displays the spray boom configuration name.	
4	Buttons for selecting and deselecting sections, which can then be increased and decreased in length.	
5	Buttons: increase/decrease number of sections.	
6	Buttons: increase/decrease the section width of selected sections.	
7	Button for switching between an odd-section and an even-section boom configuration.	

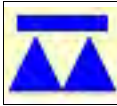


Settings

Spray boom settings 2



POS	Description	See page
1	Indication of the selected section.	
2	Section selection buttons.	
3	Nozzle (de)selection buttons.	
4	On/off button for the entire section.	

The nozzles are marked with the following symbols:

- 
 • The section has all active nozzles
- 
 • There are some active nozzles in the section
- 
 • There are no active nozzles in the section

Changing spray boom configuration

When starting to spray, one always chooses a pre-set with the most important settings for the relevant spraying.

The speed, application rate and nozzle are already stored in the pre-set. With individual nozzles, you can also choose a spray boom configuration via the resets.



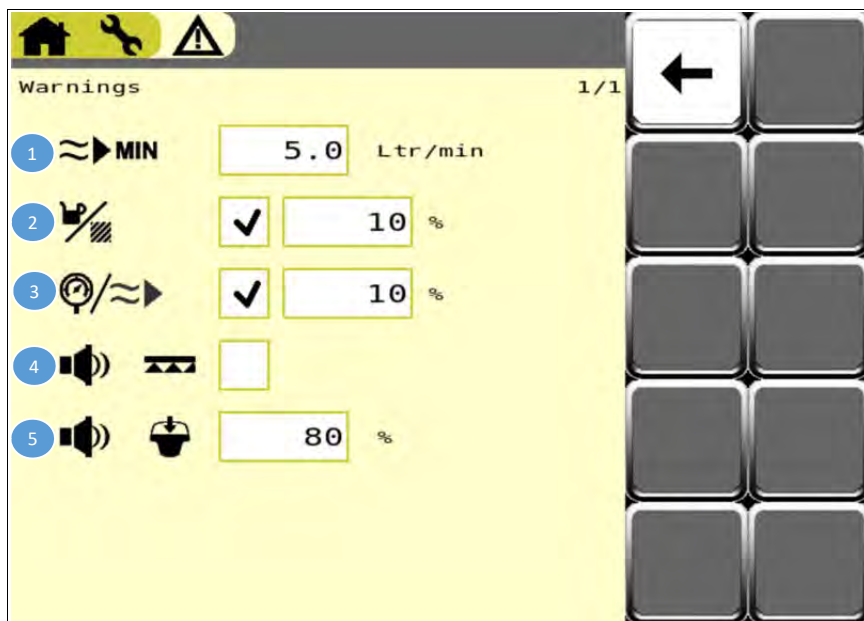
To choose a spray boom configuration, navigate to:
→ “Presets tab2” op pagina 88.

Then set the desired spray boom configuration.

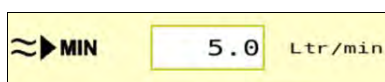
The spray boom configuration will now become active the moment the pre-set is active.

When the syringe is linked to a Task Controller and the boom configuration is changed, the software will indicate that a new connection must be made with the Task Controller.

Warnings

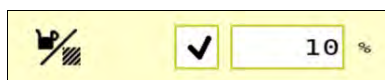


POS	Description	See page
1	Alert current spray volume too low. When the current spray volume falls below this value, it will light up red on the "Spray" screen.	31
2	Dosage warning	110
3	Pressure sensor warning	110
4	Audio signal for opening or closing sections	110
5	Displays the fill level at which the audio signal sounds.	110

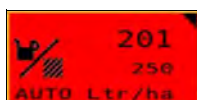


- Alert current spray volume too low.

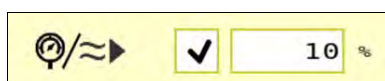
When the current spray volume falls below this value, it will light up red on the “Spray” screen.



- The dose field in the spray screen can be highlighted in red if the actual dose deviates too much from the target dose to indicate that the machine is not administering the requested dose.



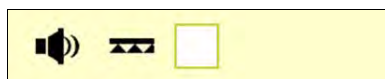
The dose field is highlighted in red if the percentage difference between the target and the actual dose exceeds the entered value by more than 10 seconds.



- Pressure sensor warning (only for machines equipped with pressure sensors)



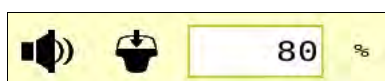
By activating the option, the maximum deviation can be defined in percentages. The icon will blink if the percentage difference between the actual and calculated pressure exceeds the entered value by more than 10 seconds.



- Audio signal for opening or closing sections

By activating the option:

- an audio signal is emitted when all sections are closed and one or more sections are open;
- an audio signal is emitted when all sections are open and one or more sections are closed.



- **Filling level at which the audio signal sounds.**

For filling functions that must be completed manually, an audio signal sounds when the fill level is almost reached.

→ See “Acoustic signal when fill level is reached” op pagina 57

The audio signal begins to sound at this level and becomes more frequent as the fill level approaches the set value.

Terminal

The iXspray software is an ISOBUS solution. Therefore, the ISOBUS environment allows the software to be displayed on any screen (VT). On the "terminal" screen, it is possible to specify which ISOBUS screen should display the iXspray software.

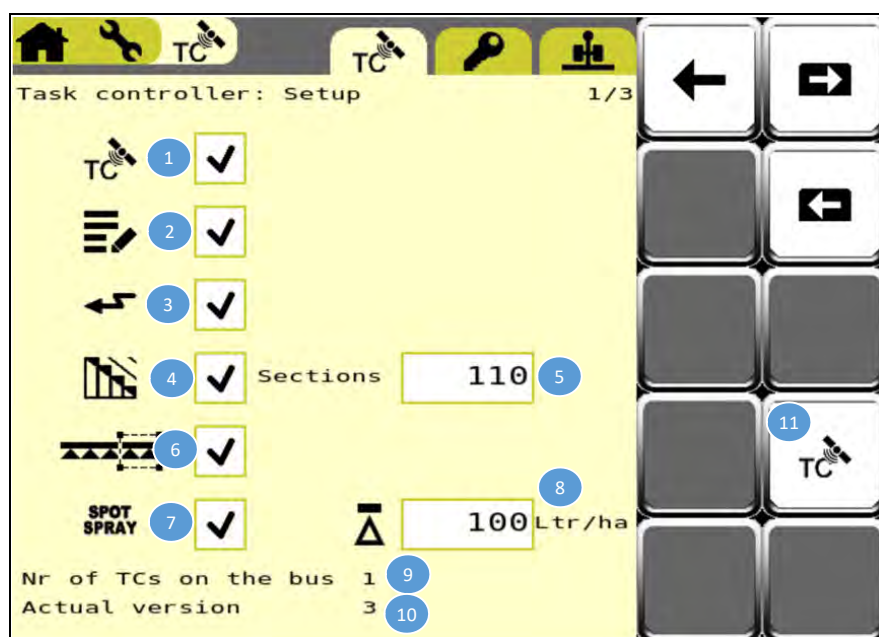


POS	Description	See page
1	Displays a list of all detected ISOBUS screens.	
2	Shows the ISOBUS screen on which iXspray is currently displayed.	
3	Enables and disables icon storage. The iXspray icons are stored locally with the ISOBUS screen when this option is selected and a connection is established for the first time with the screen. The iXspray software is therefore expected to start up faster from now on.	
4	Displays the time when iXspray tries to connect to the ISOBUS screen it was connected to in the previous session. After this time, the iXspray connects to any other ISOBUS display.	
5	Button for displaying the ID numbers of all available ISOBUS screens.	
6	Button for scrolling the list of active ISOBUS screens.	
7	The iXspray software uses this button to switch from top to bottom and vice versa on Tellus Pro terminals.	

Task Controller Setup

An external Task Controller can be used to control the section switches via GPS. This application indicates, based on the GPS position, which spray sections should be active/inactive. As a result, only the field's boundaries are sprayed, and overlaps are prevented. The GEOCONTROL Task Controller is pre-installed on Tellus terminals. It is possible to use this application, but another Task Controller can also be used. Task Controller screens are used to configure the connection to the Task Controller.

→ Please refer to the user manual of the Task Controller you are using.



POS	Description	See page
1	Enables connection to the selected Task Controller.	114
2	Enables sending of task data to the external Task Controller. The custom recording function will be hidden.	114
3	Adjusts the application rate automatically according to the task controller's rate.	115
4	Activates the switching of sections based on the Task Controller.	115
5	The maximum number of sections supported when the Task Controller communicates with the iXspray software.	115
6	Activates the SpotSpray function.	116
7	For machines with individual nozzles:	116
8	When SpotSpray is activated, and the application rate for each section originates from a Task Controller (typically via a task map), the section will not open if the application rate falls below the threshold.	116
9	Displays the number of detected Task Controllers.	117
10	Displays the software version of the Task Controller it is connected to.	117
11	Button for displaying the list of detected Task Controllers.	117

Activating communication with a Task Controller



▶ Enable the Task Controller setting to allow communication with an external Task Controller.

For precise settings, always refer to the Task Controller's user manual as well.



The TC icon is displayed in the status bar of the "Spray" screen when communication with an external Task Controller is enabled.

→ See "Icons in the status bar" op pagina 22.

Field registration data storage or export



Save field particulars

Data from the treated field is recorded in a task report during spraying. The field registration setting determines whether this report is stored locally or exported to the remote Task Controller.



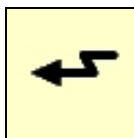
- Field registrations are stored locally. Data is available through the task reports.

→ See "Task report" op pagina 98.



- The field registration is exported to the Task Controller. The data is available in the Task Controller application.

Allow required application rate originating from an external system



The set application rate can be controlled from an external system such as an external Task Controller or a nitrogen sensor.



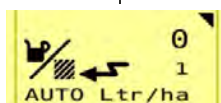
▶ Activate this setting to automatically adopt this set application rate.

→ If you want the external system to send a required application rate, consult its user manual.



RS232 connection

When the set application rate is received via a Task Controller, the data is sent through the ISOBUS protocol, which is also used for other communications. Serial connections may be required for some systems to enter the set application rate from an external system. Tellus operators can use the RS232 connection to accomplish this. This connection is located at the back or at the bottom of the control box.



The set application rate from an external Task Controller is shown next to the set application rate on the "Spray" screen.

→ See "Automatic spray volume regulation" op pagina 31.

Allowing section control by a Task Controller

The section control functionality requires the section control licence to be activated.

→ See "Task Controller licence" op pagina 118.



The Task Controller can then directly turn on and off individual spray sections based on GPS data when this setting is selected.



▶ Tick the checkbox to enable the feature.



The "section control active" icon then appears in the status bar on the "Spray" screen when section control is on.

→ See "Icons in the status bar" op pagina 22.

Settings

For machines with individual nozzles:



If the sections of the Task Controller are very small, the outer section may continuously jump inside and outside the field boundary. Due to this effect, the section continuously opens and closes involuntarily. Weak GPS signals intensify this effect. This problem can be resolved by preventing the spray nozzles in the outer sections of the Task Controller from being split into separate sections. By not splitting the outer section, the nozzles are less likely to end up entirely outside the field boundary and, therefore, stay in place.

SpotSpray on/off

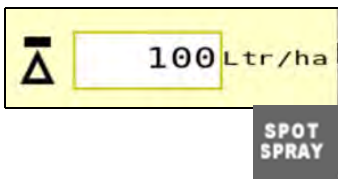
The SpotSpray feature requires the SpotSpray licence to be activated. See "Task Controller licence" op pagina 118.

The SpotSpray feature allows you to spray only very specific areas that can be indicated in a task map. These task maps can be created manually or based on images from drones or satellites. SpotSpray switches sections based on the application rate limit when activated. Spraying takes place in all areas in the task map with the same or higher application rate. No spraying is carried out on all areas with a lower application rate. This feature can be used, for instance, to control perennial weeds that only grow in certain areas.

You can turn the SpotSpray function on or off here with the sprayer intended for the purpose.



- ▶ Tick the checkbox to enable the feature.
- ▶ Set the limit for the application rate.

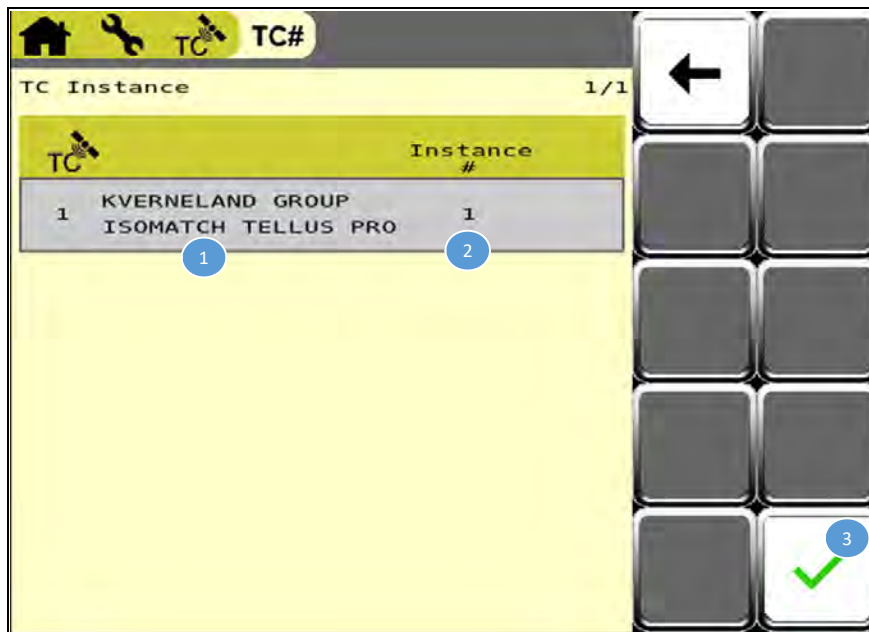


The "SpotSpray active" icon then appears in the status bar on the "Spray" screen when SpotSpray is on.

→ See "Icons in the status bar" op pagina 22.

Task Controller list

The page displays a list of all detected Task Controllers. You can connect to the correct Task Controller from this page. After establishing a connection with a Task Controller, iXspray will automatically attempt to reconnect with that Task Controller in subsequent sessions.



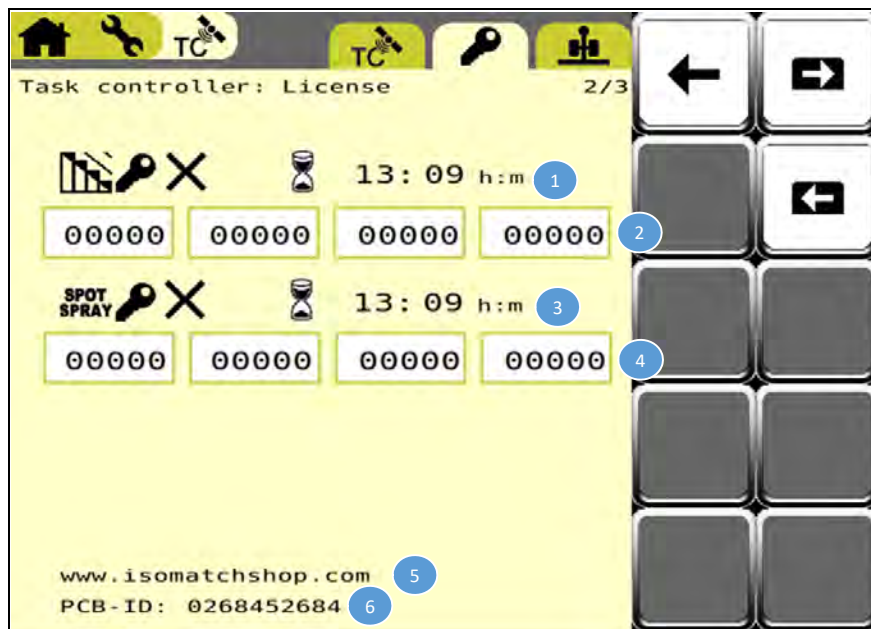
POS	Description	See page
1	Task Controller name.	
2	Task Controller identification number.	
3	Button for connecting to the selected Task Controller.	

Settings

Task Controller licence

A licence is required for the following features:

- Allow the SPRAYERCONTROL licence to use the "Check Section via Task Controller" function.
- The SpotSpray licence for the use of the "SpotSpray" function.



POS	Description	See page
1	The time the unlicensed sprayer can use section control via a Task Controller feature.	
2	SPRAYERCONTROL licence code input field.	115
3	The time the sprayer is allowed to use the SpotSpray feature without a licence.	
4	SpotSpray licence code input field.	116
5	Link to the web shop for a Task Controller licence.	
6	Product identification code required to purchase licences.	119

SPRAYERCONTROL and SpotSpray licences can be purchased via the website www.isomatchshop.com. Or via the dealer. You can still get acquainted with the feature for free for a few hours if the machine does not have a license.

You get the first alert that the free time of use will expire after 5 hours of use. The remaining free time of use is also displayed upon each start-up of the system.

TIP Purchase the software licence in good time!

You need to purchase the licence via the IsoMatch webshop in good time in order to be able to continue working without disturbance after the free time of use has expired.

In addition to the SPRAYERCONTROL licence, an external job controller supporting section control is also required to spray according to GPS location. The GEOCONTROL Task Controller is already installed by default on Tellus terminals. This Task Controller can be used for a limited time. The IsoMatch GEOCONTROL licence is required for permanent use of GEOCONTROL. This licence is also available through the IsoMatchshop. Refer to your Tellus user manual for this.

Purchasing software licences

WWW.ISOMATCHSHOP.COM
PCB-ID: 268459689

Identification code of the machine control

- ▶ Read the product identification code (PCB ID) in the Task Controller License screen and write it down.
- ▶ **Go to www.isomatchshop.com webshop.**

You will see the possible software packages which you can purchase via the IsoMatch control box in the webshop.

Activating the license

Input field for license code



00000

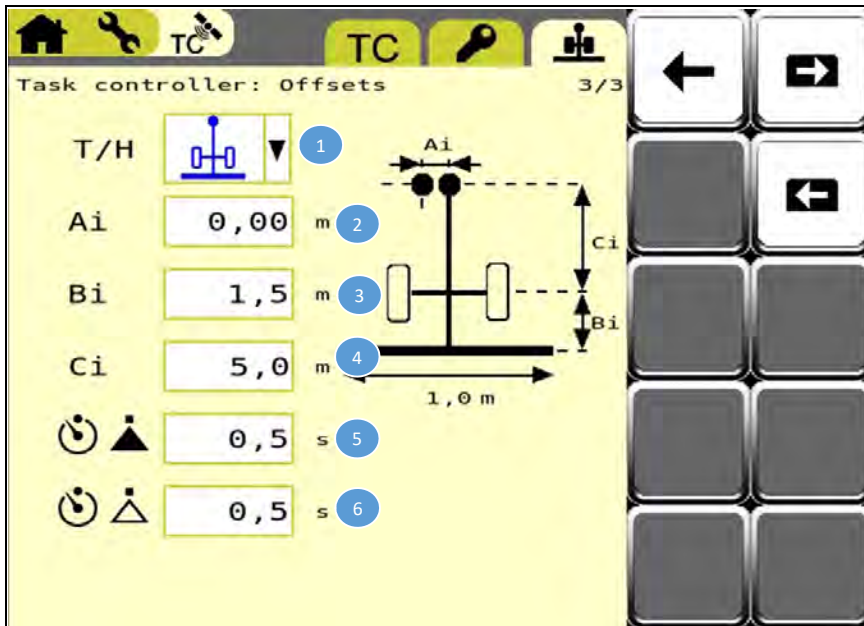
- ▶ Press the first input field. The pop-up screen opens.
- ▶ Enter the licence code that you have received, with five digits per input field.
- ▶ Confirm the entered series.
- ▶ Enter all series in this way and confirm them.



Settings

Task Controller Offsets

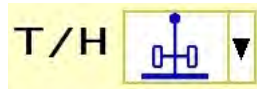
iXspray needs to know where the spray boom is in relation to the tractor's hitch point for the switching of spray boom sections by an external Task Controller to work properly. iXspray will then correct these distances when switching sections.



POS	Description	See page
1	Machine type (mounted or trailed) for Task Controller.	121
2	Offset distance between the GPS antenna and the centre of the spray boom parallel to the driving distance (Ai distance).	121
3	Offset distance between the wheelbase to the centre of the spray boom perpendicular to the driving distance (Bi distance).	121
4	Offset distance between the wheelbase and the GPS antenna perpendicular to the driving distance (Ci distance).	121
5	Time needed for switching on the section. Based on this time, the Task Controller will switch on the sections slightly earlier.	121
6	Time needed for switching off the section. Based on this time, the Task Controller will switch off the sections slightly earlier.	121

Distance of GPS antenna to spray pattern on the ground

The position of the spray boom in relation to the hitch point.



▶ Select between trailed, mounted or self-propelled sprayer.

These distances determine where the spray pattern starts and stops

TIP It determines the quality of control of the spraying on the headland. The details will be pre-filled upon delivery.

Switching on and off sections correction time

When the Task Controller signals that a section is to be opened or closed, some switching time is required to actually do so. By adjusting the correction time, the sections will always open and close at exactly the right time.



• Switching time for activating a section.

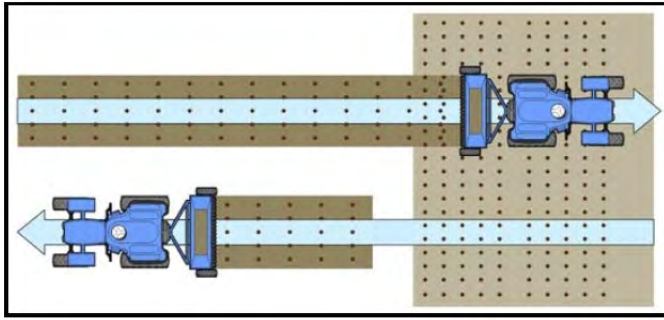


• Switching time for deactivating a section.

NOTE: The response time for the iXflow hermetically/electrically sealed nozzles is considerably shorter.

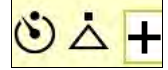
Settings

Working with correction times

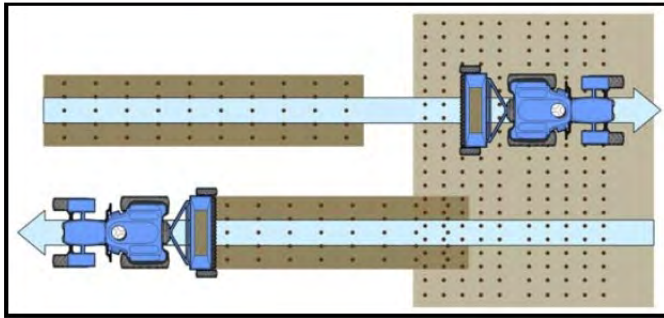
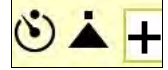


× **Response of start/stop spraying too late**

▶ Increase the switch-off response time

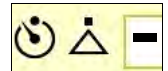


▶ Increase the switch-on response time

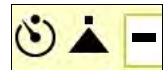


× **Response of start/stop spraying too quick**

▶ Lower the switch-off response time

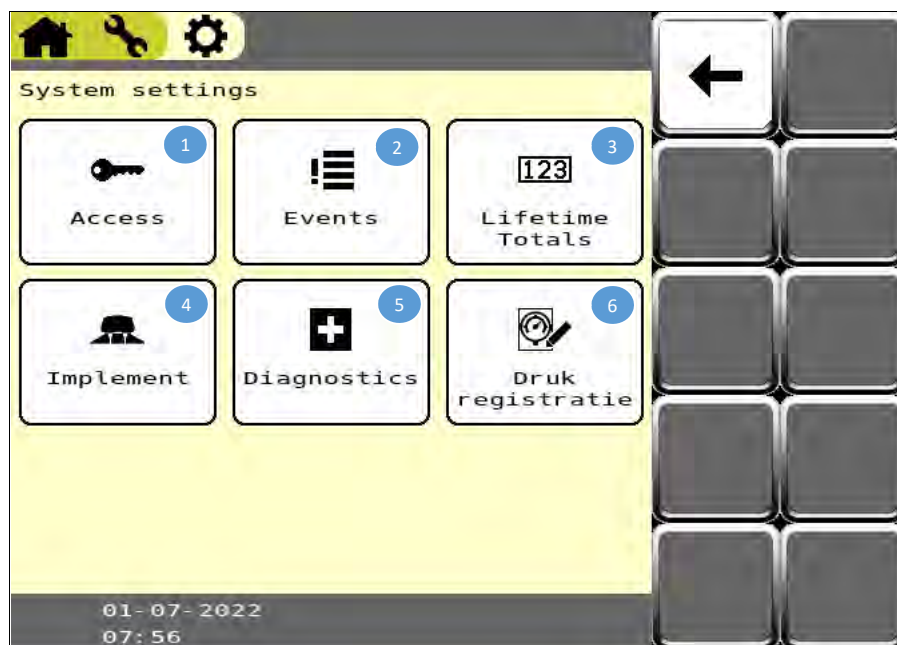


▶ Lower the switch-on response time



→ See also the “IsoMatch GEOCONTROL” user's manual for further explanation of the fine-tuning of the correction times of start and stop spraying on the headland.

System



POS	Description	See page
1	Access button: Login option for accessing factory settings for service engineers.	
2	Events button: Provides information on any faults that have occurred in the past and is intended for use by service engineers.	
3	Totals button: Overview of working hours, hectares, driven distance and date of servicing.	
4	Machine button: Contains all the machine's factory settings. End users can adjust some settings.	124
5	Diagnostics button: Displays software information, diagnostics and test screens for the sprayer's various functions and is aimed at service engineers.	
6	Button. Pressure registration: Displays a summary of the spraying pressure over the last hour.	

Settings

Machine settings

It contains all machine-specific settings classified by subsystem. Although all machine settings are visible, only a limited portion is relevant to end users and can be adjusted without an access code. In this instruction manual, only settings relevant to the end user will be discussed. Please contact your dealer if you have any questions about the other settings.



POS	Description	See page
1	Speed button: for choosing the speed signal source, calibrating the wheel sensor and turning on/off the simulation speed when driving off.	
2	Wet system button: for calibration of the volumetric flow meter.	
3	Tanks button: for calibration of the main tank zero point.	
4	Sections button: does not contain settings relevant to the end user.	
5	Hose clean dimensions button: does not contain settings relevant to the end user.	
6	Steering button: calibration of the wheel axle centre position.	
7	Other button: Calibration of the horizontal position of the spray boom.	
8	Fold button	
9	Other button	

“Wet System” screen

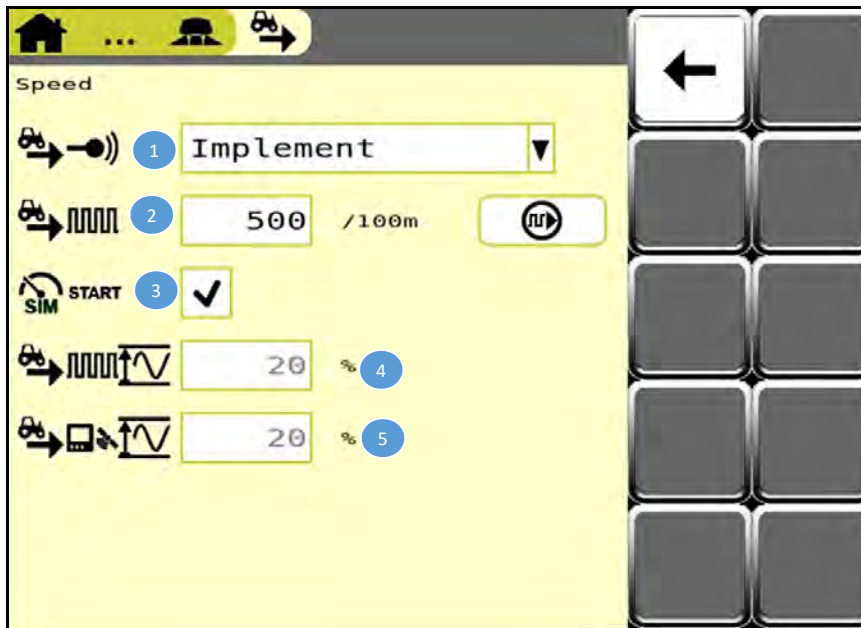
The screen offers two sheets for:

- Calibrating the flow meter in pulses per litre
- and in litres per minute via gauging.
- Dealer settings

Here you can change the settings by performing a calibration yourself.

Settings

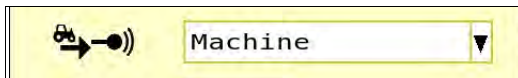
Speed



POS	Description	See page
1	Choice of driving speed signal source.	
2	Wheel sensor calibration in pulses per 100 metres.	
3	Turning on/off simulation speed when driving off.	
4	Damping of driving speed signal.	
5	Damping of other signals.	

Driving speed signal

Speed signals can come in from a variety of sources. This setting allows you to select the correct speed source. The driving speed signal should be selected based on the capabilities of the tractor and/or sprayer.

**Driving speed signal selection**

- ISO Wheel:

A speed sensor on the tractor provides the speed signal. The ISOBUS is the protocol used to transfer data.

- ISO Radar:

The speed signal originates from a radar sensor on the tractor. The ISOBUS is the protocol used to transfer data.

- Machine:

A wheel sensor on the trailed sprayer provides the speed signal. The sensor is connected directly to the iXspray electronics.

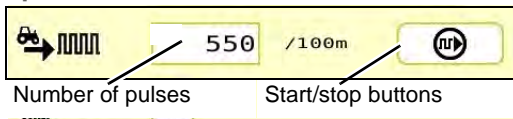
- J1939:

A GPS antenna provides the speed signal. The J1939 is the protocol used to transfer data.

- NMEA:

A GPS antenna provides the speed signal. The NMEA is the protocol used to transfer data.

Calibrating wheel sensor for driving speed



- ▶ Perform calibration of the driving speed:
 - for using the machine for the first time,
 - after adjusting the measuring system for driving speed, e.g. after a sensor is replaced,
 - when other tyres or wheels are being used,
 - when used under extreme circumstances, e.g. with excessive wheel slip.
 - in situations where one or more of the following causes for deviations are present:

Deviations in driving speed measurement can be caused by:

- engaging or disengaging front-wheel drive,
- changing soil composition,
- wheel slip,
- Tank more or less full than during the calibration,
- variation in inflation pressure (changes the wheel diameter),
- tyre wear,
- working on slopes.

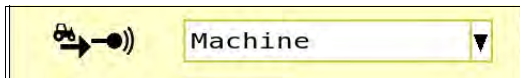
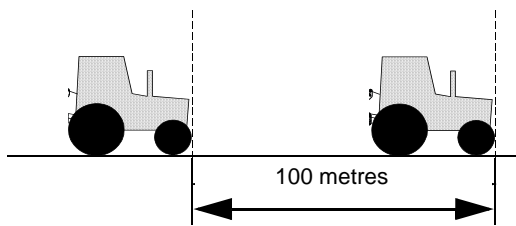
Some of the mentioned causes of deviations are not valid for speed measurement on the wheel of a trailed machine.

All comments regarding the wear, driving tyre pressure are given on the measured wheel.

Preparation

- ▶ Connect the machine,
- ▶ Fill the spray tank to half,
 - See "Filling" op pagina 52.
- ▶ Check the settings in the control system with regards to driving speed measurement and change as required,
 - See paragraph »Speed« on page 126.
- ▶ Check the inflation pressure and ensure that it is at the required levels.
- ▶ Drive to the field that you are going to spray.

Operation

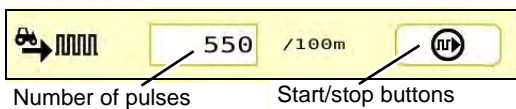


Perform calibration of the driving speed as far as possible under similar circumstances under which work normally takes place.

- ▶ Disengage the front wheel drive, unless it will also be engaged while working.
- ▶ Carefully measure a distance of 100 metres and mark the start and end points, e.g. with pickets.
- ▶ Place a marker on the tractor at the starting point, e.g. in the middle of the front wheel.
- ▶ Switch the control box on.
- ▶ Navigate to the “Speed” screen in the “Machine settings” menu
- ▶ Check the settings in the control system with regards to driving speed measurement and change as required,

→ See “Calibrating wheel sensor for driving speed” op pagina 128.

Start the Calibration



Number of pulses

Start/stop buttons

Press the ‘start’ button to start the calibration.

- ▶ Drive in a straight line at the usual working speed to the end point so that the marker on the tractor would come to a standstill right next to the end point. You will notice that the pulse count is displayed on the screen.
- ▶ Press the stop button to end the calibration.
- ▶ Make a note of the number of pulses so that the value can be entered manually in future.

The control system will have saved the number of pulses per 100 metres and with this data will calculate the driving speed and correct the dosing.

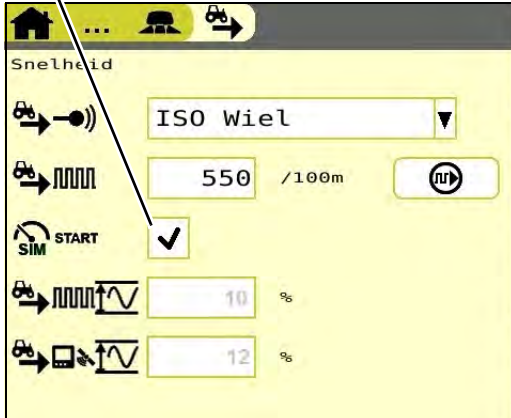
INDICATION It is possible to enter the number of pulses per 100 metres manually, if you make use of more than one tractors, for instance, and the number of pulses per 100 metres has already been determined. We recommend, however, that driving speed calibrations be performed every now and then under different working conditions.

Driving speed simulation at spray start

Simulation driving speed



Simulation driving speed



Simulation speed can replace the measured driving speed

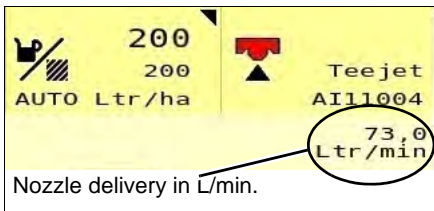
The simulation speed is automatically used if the central switch sprayer is turned on and no speed signal is present, or the measured speed is 0.

Starting a pass from a standstill and activating spraying will always result in a slight delay in the speed signal. This is particularly noticeable when the speed signal comes from GPS since GPS always calculates speed after driving a certain distance. A lagging speed signal will also cause a delay in the dosing. The "driving speed simulation at spray start" setting prevents the delay in the dosing. When this setting is active, simulation speed will be applied for the first few seconds after the spray function is enabled. It switches back to the measured speed when the actual speed exceeds the simulation speed again. The simulation speed is active for up to 10 seconds. After that, it switches back anyway to the measured speed. Using the simulation speed when driving away improves the connection in the pass significantly.

The set driving speed from the active pre-set is used as the simulation speed.

See pre-sets page 87.

Nozzle delivery in L/min



X

The nozzle delivery can also be calculated from the entered values. This value is important for the nozzle selection and the gauging of the machine.

For example:

- Application rate at this spraying 200 l/ha
- Working width 21 metres
- Spray volume required 73 L/min.

Nozzle delivery 73: 42 = 1.74 L/min.

→ See also paragraph »Procedure for calibrating the volumetric flow meter« on page 132.

Wet system

A volume flow meter is used to measure the volume sprayed. For calculating the volume flow in L/min the spray computer needs the ratio between the number of pulses and the number of litres needed. The flow meter is set correctly on delivery, but checking and adjusting the set value annually is recommended to ensure exact dosing at the beginning of the spraying season.

Always perform the gauging with a cleaned tank and clear water.

There are 2 ways to calibrate the volumetric flow meter:

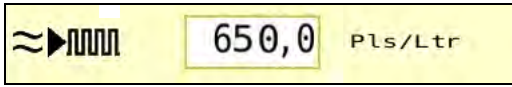
- Adjustment via the number of pulses per litre (pls/L)
- Direct input of measured litres per minute while spraying is active.



POS	Description	See page
1	Calibration of the volumetric flow meter in pulses per litre.	132
2	Calibration of the volumetric flow meter in litres per minute via gauging.	133

Settings

Calibration of the volumetric flow meter



For calibrating the volumetric flow meter, this number of impulses (e.g. 650 pls/L) must be entered in the entry field.

Procedure for calibrating the volumetric flow meter

- ▶ Fill the spray with clean water.
- ▶ Switch on the PTO shaft with max. 540 rpm.
- ▶ Activate the spray function.

The current volume flow in L/min is displayed on the iXspray's main screen.

- ▶ Use a measuring glass to determine the nozzle delivery for minimum 5 nozzles distributed over the entire breadth of the spray boom.
- ▶ Take the mean of the values and multiply by the number of nozzles.

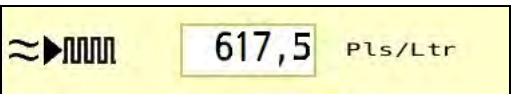
This calculates the total boom spray volume.

Adjustment after monitoring

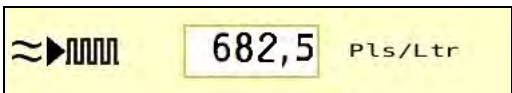
If the so determined yield in L/min does not match the stated L/min value, the number of impulses (pls/L) should be corrected as follows:

X

Example:



- The stated value in L/min comes to only 95% of the measured value.
- ▶ Reduce the number of impulses by 5%.



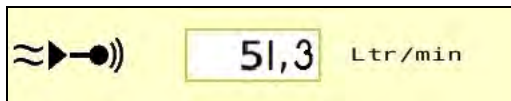
- The stated value comes to 105% of the measured value.
- ▶ Raise the number of impulses by 5%.

INDICATION

- Use the decimal as well for accuracy; consequently, do not round off to a whole number.
- The PTO shaft rpm and the pressure regulator must not be changed during this entire process (replacing the fluid and reading off the stated L/min value)!
- It is possible to repeat the measurement after adjusting the number of pulses.

Direct input of the calibration result

It is also possible to enter the total output in L/min directly instead of correcting the number of pulses. The iXspray software calculates then the number of pulses per minute according to the value entered and adjusts the number of measured pulses and the calculated value.



The current total flow rate in L/min is displayed according to the current calibration. Enter the measured total yield in L/min. The current yield will then be refreshed.

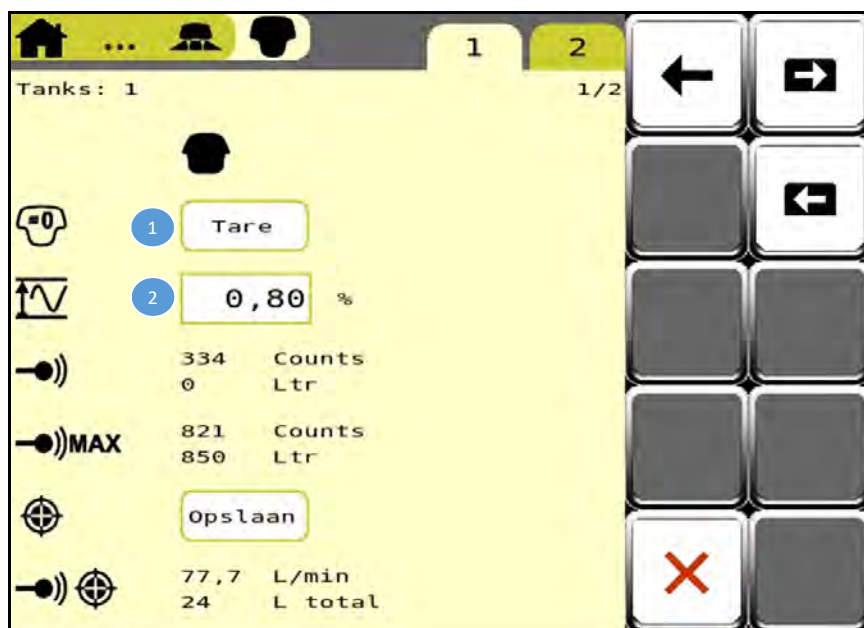
Note: The entered value is the volume flow at the time of entry. The spray function must therefore be active when the value is entered.



- ▶ Select the input screen l/min
 - ▶ Enter this value directly via the second input screen, l/min.
- The system uses this value in its calculations to determine your required application rate in litres per hectare.

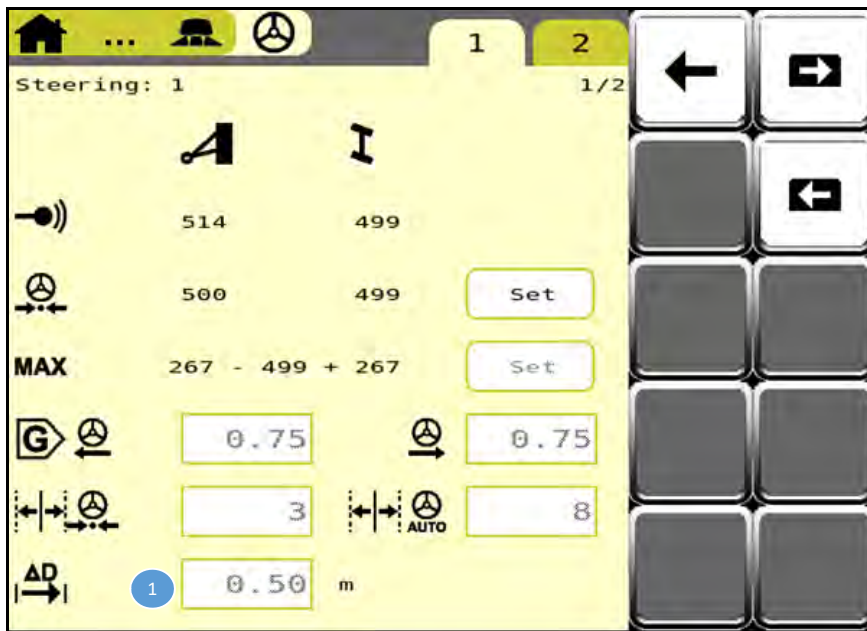
Settings

Tanks:



POS	Description	See page
1	Calibration of the 0 point of the tank.	
2	Tank level sensor filter	

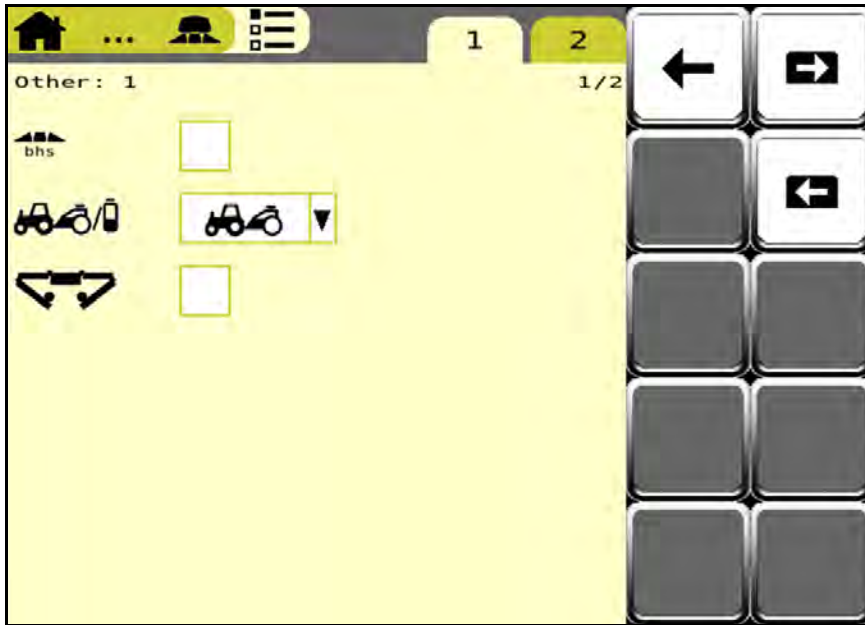
Steering:



POS	Description	See page
1	PID / non-PID steering mode	

Settings

Other:



Not configurable by the user

Operation

When using iXflow-Pulse for spraying, the flow is regulated by a special PWM valve located in the nozzle holders, rather than the control valve.

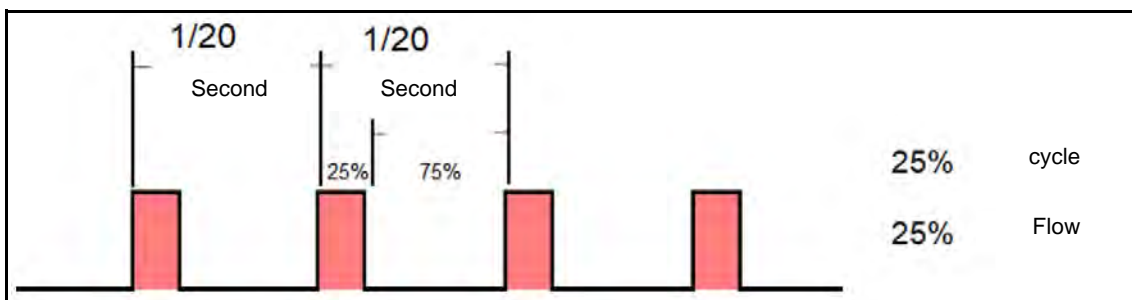
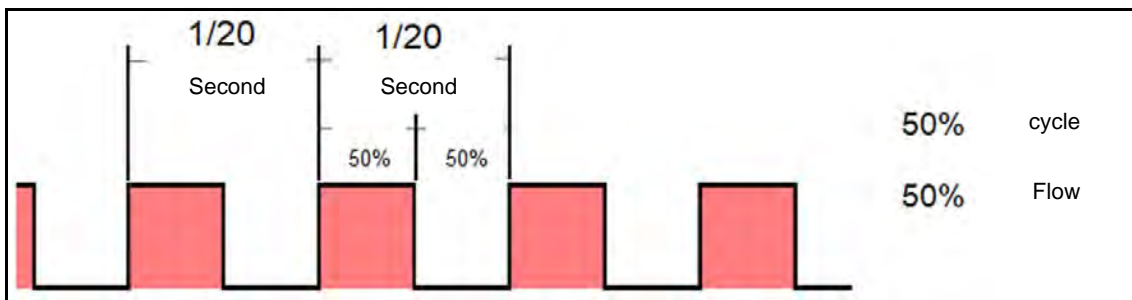
The control valve remains, but it now regulates pressure instead of volume flow.

As flow and pressure can be controlled separately in the PWM system, they can also be adjusted independently, while still adhering to system limitations.

PWM valves are also referred to as Nozzle Control Valves (NCVs), which are a unique type of valve capable of rapid cycling, usually at a frequency of 20 times per second (20 Hz).

The valve's rapid opening and closing is imperceptible in the spray pattern during normal operating conditions.

If the nozzle is held open for half of the cycle time (50% of a duty-cycle, which is 1/20th of a second), the resulting flow will be halved (50% flow) compared to a nozzle that remains open all the time.



If the nozzle is held open for a quarter of the cycle time (25% of a duty-cycle, which is 1/20th of a second), the resulting flow will be a quarter (25% flow) compared to a nozzle that remains open all the time.

In a cycle, the duty-cycle determines the percentage value of the valve being open.

The flow is regulated by altering the duty cycle.

The opening and closing frequencies remain the same (20 Hz in this case).

Benefits of iXflow-Pulse

- Consistently maintained drop size across a broad range of speeds.
- Independent adjustment of pressure and flow rate while the vehicle is in motion.
- Quicker response times for the opening and closing of spray nozzles.
- turn compensation.

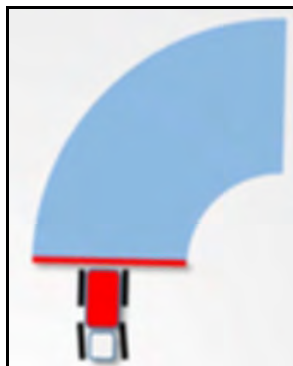
Turn compensation

In field sprayers without iXflow-Pulse, the distribution on the field is uneven on turns due to the faster movement of the outer part of the boom compared to the inner part.

iXflow-Pulse detects turns using a gyro sensor and corrects the flow at each nozzle to achieve a uniform distribution around turns.



Without compensation.



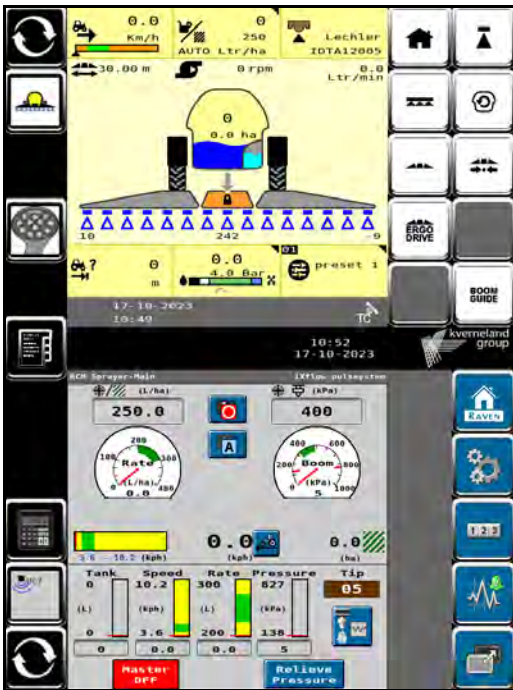
With compensation.

If a sprayer comes with iXflow-Pulse, this option is already activated in the iXspray by default.

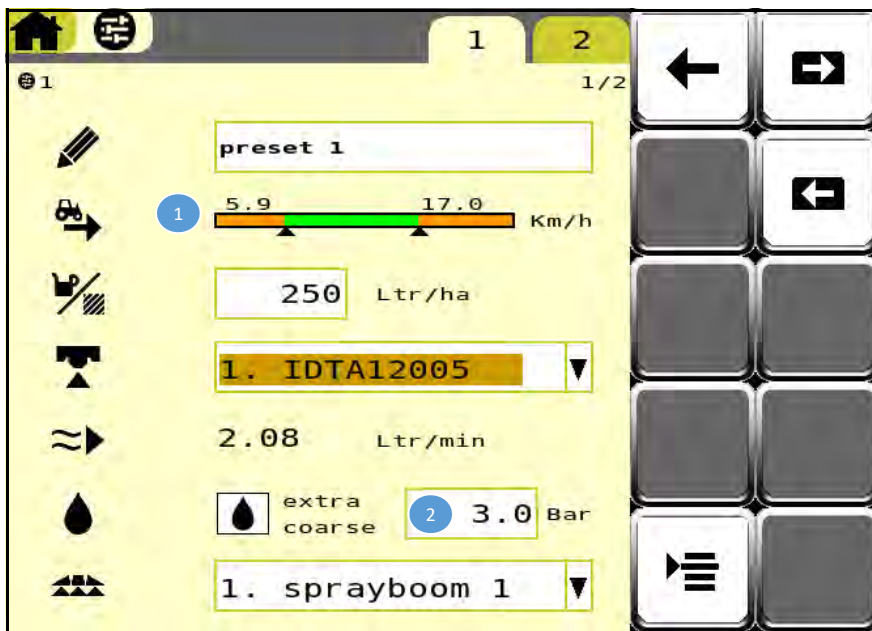
iXflow-Pulse on the Tellus

If the machine comes with iXflow-Pulse, an extra screen will be available on the Tellus.

NOTE All settings are configured via the iXspray screen.



Presets on iXflow-Pulse



POS	Description	See page
1	Speed range	
2	Pressure setting	

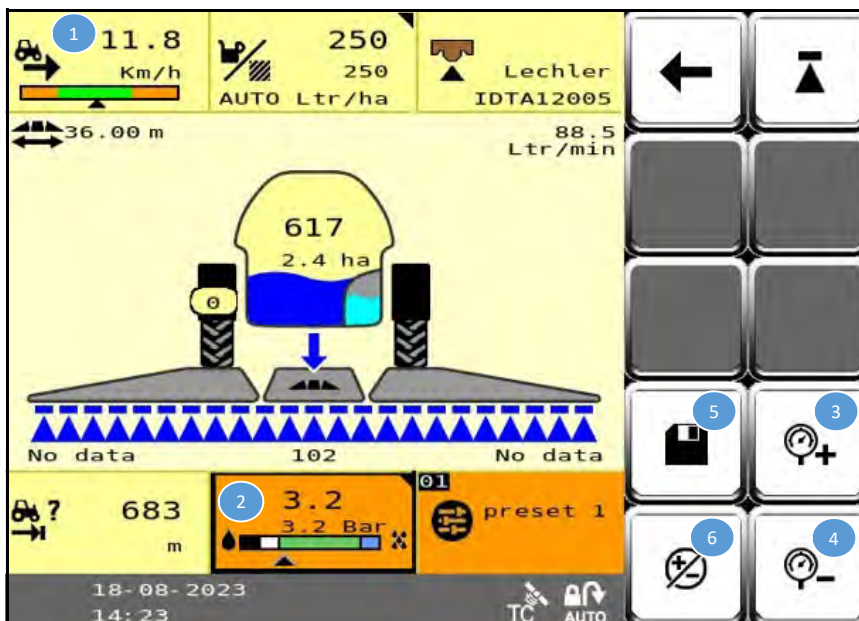
When iXflow-Pulse is configured, the target pressure can be set within the presets (2).

The target speed setting is no longer required. Instead, a speed bar (1) is displayed.

The green area indicates the permitted speed range for the current settings.

The minimum and maximum speed limits are the values allowed within the permitted speed range.

Display on spray screen



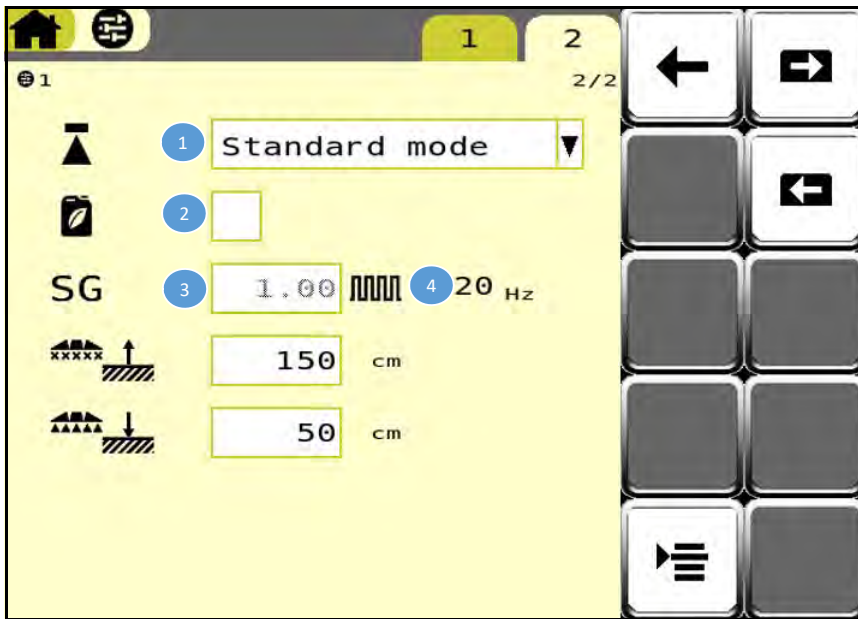
POS	Description	See page
1	Speed (range and actual speed)	
2	Select the pressure field	
3	Temporary pressure increase	
4	Temporary pressure reduction	
5	Save to preset	
6	Reset preset values	

The black arrow below the speed range shows the current speed.

NOTE Keep speed within range for effective spraying.

Spray mode

The spray mode is adjustable through the second tab of the presets.

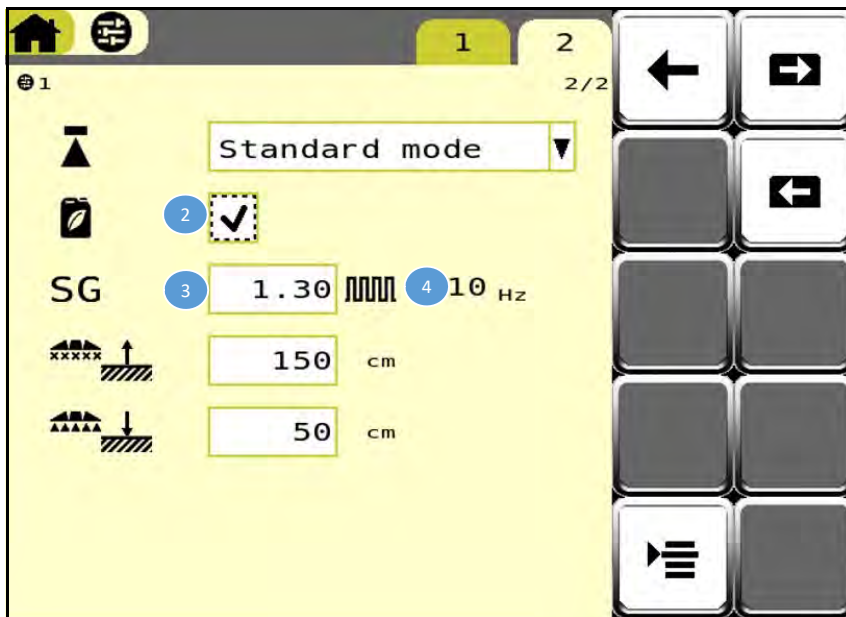


POS	Description	See page
1	Spray mode	

The iXflow-Pulse system features several spray modes:

- **Default mode**
This is the default mode. In this mode, regulation is based on flow and pressure.
Turn compensation is enabled in this mode.
- **VP mode**
This mode varies the pressure to achieve a predetermined flow and duty-cycle for the nozzle.
Turn compensation is enabled in this mode.
- **On/off mode**
In this mode, the system behaves like a traditional sprayer. This implies that the nozzles remain open throughout spraying (duty-cycle = 100%) and the iXspray appears identical to a classic sprayer. This mode is suitable for nozzles that are not compatible with iXflow-Pulse.
Turn compensation is not enabled in this mode.

Liquid fertiliser spraying



POS	Description	See page
2	Selection for liquid fertiliser	
3	Specific weight	
4	Pulse frequency	

Liquid fertiliser has higher density and viscosity than other spraying agents.

When using iXflow-Pulse to spray liquid fertiliser, it is important to activate the liquid fertiliser function (2) in the active preset to prevent false alarms and extend nozzle lifespan.

If the liquid fertiliser function is active:

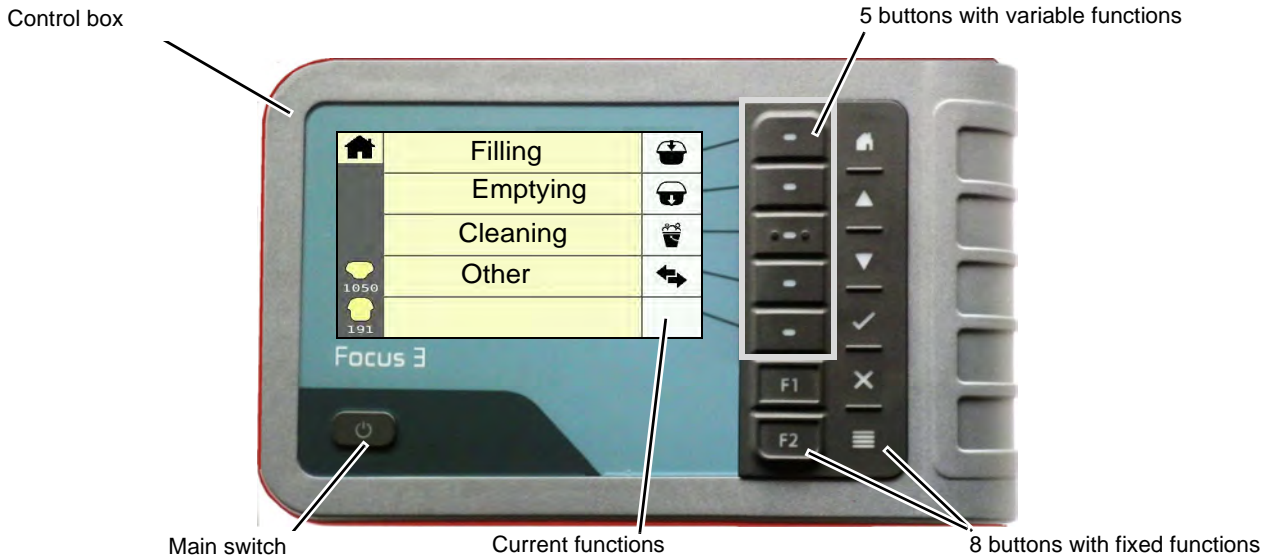
- the specific weight (= density in kg/litre) changes from 1.00 to 1.30, making it workable (3). Most liquid fertilisers have a specific weight of approximately 1.30. Refer to your liquid fertiliser datasheet for exact values.
- The system's pulse frequency is lowered from 20 Hz to 10 Hz (4) to increase the lifespan of the nozzles.

→ For more information, please refer to the iXflow-Pulse instruction manual.

Focus 3







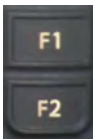
Focus 3 control box

The following overview provides an explanation of the operation.




Fixed buttons

The buttons have the following permanent functions:

-  This button allows you to return to the main menu from several menus.
-   Use these buttons to select the desired item in the screen that you want to change.
-  This button confirms that you are going to increase or decrease the value in a selected input field or confirms the change.
-  Use this button to exit the selected input field without overwriting the old value.
-  Use this button to access the "Image and Sound" settings screen
-  **The F1 and F2 buttons have the +/- function when changing the spray tank capacity.**

Toggle buttons

-  The 5 buttons, on the right near the screen, are linked to the current function of the relevant button. The current functions are shown in the taskbar, to the left near the buttons.
- The functions per menu change near the buttons.**
- All iXclean activities are selected and performed with the 5 toggle buttons.

Starting up and setting the Focus 3

Start up sequence

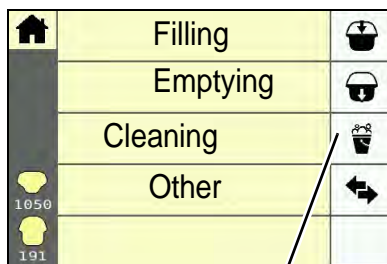
- ▶ Before starting to work with the iXclean, check that
 - the spray control is switched on and released,
 - the sprayer button is on the "Off" position
 - and the individual boom section switches are switched to "Off".

Main menu



- ▶ Remove the lock

After starting the spray control the iXclean Comfort/Pro screen displays the start screen in the locked position.

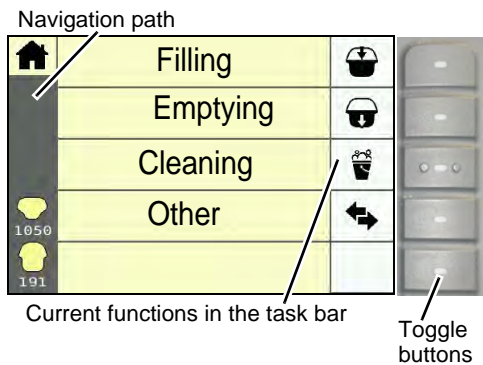


Current functions in the task bar

The main menu is now displayed

Focus 3

buttons with variable functions



The iXclean control box has 5 toggle buttons on the right of the screen. All iXclean activities are selected and performed with them. The current function of the relevant key is displayed in the task bar on the left beside the buttons.

Different control of the focus 3 iXclean control box

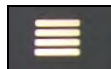
Functions of these buttons and the procedure to set or adjust system values of the control can be found
 → the control box user's manual.
 → or where they differ, in this manual.
 You can adjust the factory settings of the control box on the sprayer in the settings menu for your use.



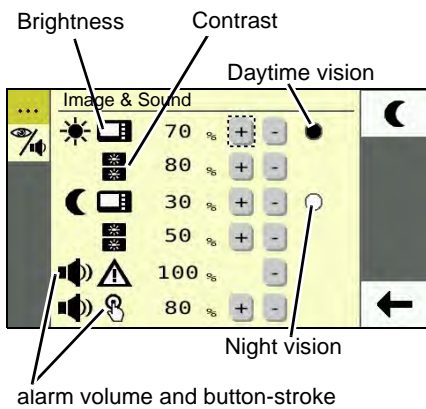
Navigation path

The navigation path in the upper left of the screen shows where you are in the menu.

Image and Sound setting menu



The fixed button at the bottom right opens the "Image and Sound" menu.



Daytime and night vision and sound setting

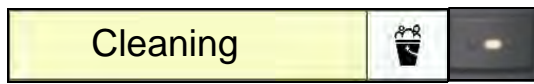
Brightness and sound volume can be set via a menu that can be opened directly. The menu offers:

- Choice for daytime or night vision (top button)
- Brightness setting of daytime/night vision position
- Contrast setting of daytime/night vision position
- Volume setting of button and alarm signal
- ▶ Exit menu button (lowest button)

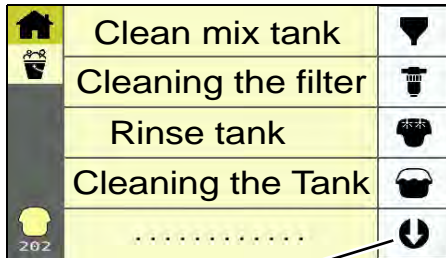
→ For performing all settings, see also "Setting up IX Clean Comfort and Pro Focus 3" op pagina 150.

Work menus with more than 5 function menus

Some work menus offer a second page with function menus. The work menu "Clean" has more function menus than what can be fit on one page.



- ▶ Select the work menu "Clean" by pressing the button beside the relevant symbol. Hereafter, the function menus within this work menu are displayed.

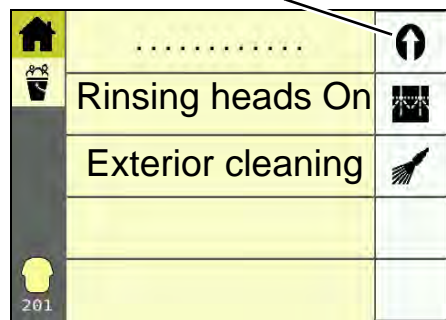


Symbol "Scroll to next page"

Work menu "Clean" with several pages of function buttons

- ▶ Open the following page with this work menu with the lowest button beside this symbol.

Symbol "Scroll to previous page"

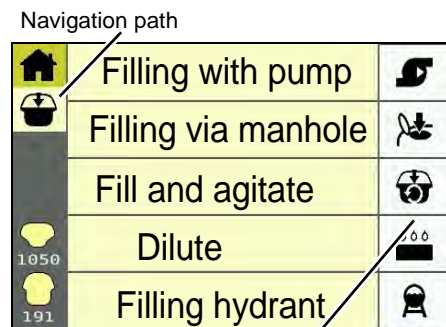


- ▶ Scroll back to the first page with the top button.

Work menu "Clean" page 2

Work menu structure

A work menu offers several function menus (tasks)
Several filling methods in the menu "Fill" are indicated here.



Navigation path

The work menu "Fill" selected offers 5 fill methods in the task bar, each having its own (function) menu.

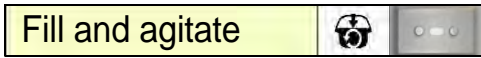
Task bar of the work menu

Focus 3

Selecting within a work menu

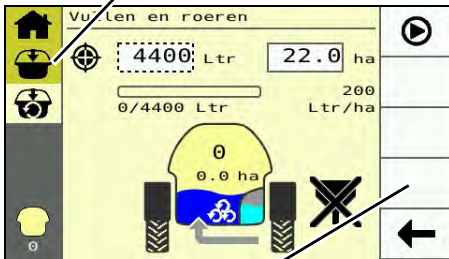
X

You choose a function menu with a button within the work menu. **The selection "Fill and agitate" is made here**



The third button is pressed.

Navigation path



Task bar of the menu

The function menu "Fill and agitate" is displayed.

- The task bar of the screen displays two buttons:
 - The "Play" button
 - and the "Arrow" button
- The required tank capacity is 4400 litres
- The navigation path shows the path followed to arrive at the current screen
- The current tank capacity

Change the required capacity of the spray tank

On the Focus 3

You have set a filling level of the spray tank via the spray control. A full spray tank is not always required to perform the spraying. As in case of a recent filling.

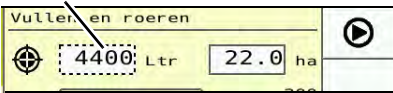
You can set another filling level temporarily on the Focus 3.

NOTE: This new filling level is not saved.

X

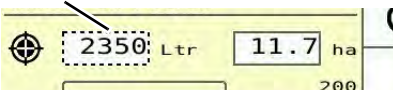
Let us suppose that you're going to spray 2300 litres.

Spray tank filling level



- ▶ Press the fixed button F2 to decrease the value. This happens in steps of 100 litres.

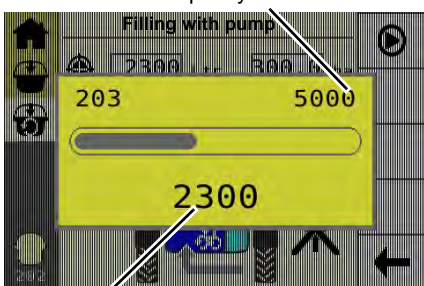
Spray tank filling level changed



- ▶ Start filling by pressing the start button.

Fine setting of the new tank capacity If there is a need to change with more precise numbers, e.g., 2350 litres, this is done in a pop-up screen.

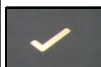
Maximum tank capacity



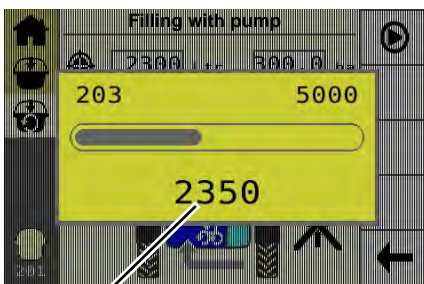
Change required tank capacity



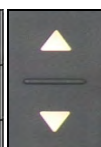
Let us suppose that you're going to spray 2350 litres.



- ▶ Access the pop-up screen with the “tick” button.
- The last adapted value, here 2300, appears in the pop-up screen.



Required tank capacity changed



Changing in the pop-up screen

- ▶ Change the values with the fixed selection buttons.
 - Here, the filling level of the spray tank from 2300 to 2350 litres.

TIP The values change faster by pressing the selection button longer.



- ▶ Confirm the selection with the fixed “tick” button
- The function screen “Fill with pump” now opens up for filling up to 2350 litres.

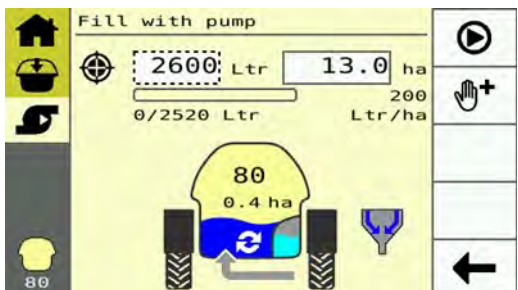


Or
▶ Cancel the change.



The task screen then reappears with the changed value

- The task bar is displayed:
- the “Play” button to start the task,
 - the “Arrow” button to exit the task.

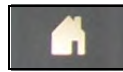
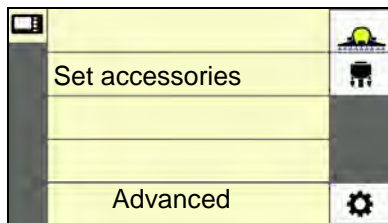


The Fill with pump menu

- The task bar is displayed:
- the “Play” button to start the task,
 - the manual fill button (only with iXclean Pro)
 - the “Arrow” button to exit the task.

Setting up IX Clean Comfort and Pro Focus 3

You can adjust the factory settings of the control box on the sprayer in the settings menu for your use.



▶ After the sprayer has started and is unlocked, press the fixed “Home” button for 2 seconds.

The settings menu is now displayed.

Settings menu

Here you can



- Add/set accessories used

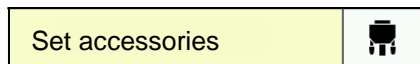


- Advanced settings like:

- Factory settings
- Diagnostics screens
- Test screen for control buttons (press all buttons to exit the test.)

Add/set accessories

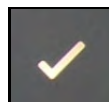
You have the option of adding and setting an additional information system or operating accessory for some activities here.



No setting is required here for your application

Language choice and units same as tractor control box

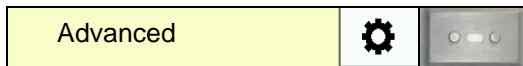
The Focus 3 uses the language set by your ISO-tractor control box or IsoMatch, on which you control the iXspray.



▶ Open the cell to be changed with the fixed “tick” button.

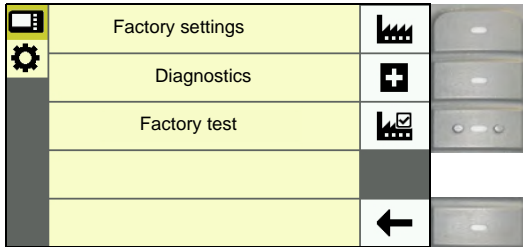
A pop-up screen with the hour setting appears.

Advanced settings



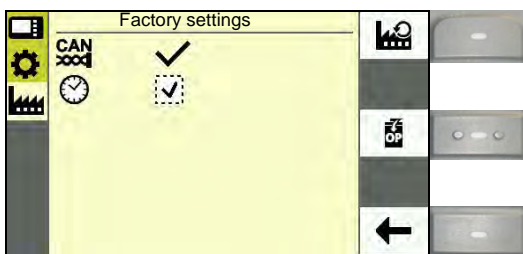
► The button opens the chosen menu “Advanced” from the settings menu.

The toggle buttons are within this menu:



- the factory settings,
- diagnostics screens
- and a button test to open “Factory Test”.

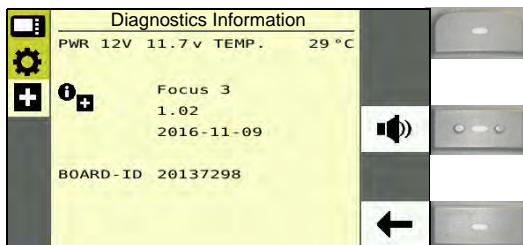
Factory settings



The following happen within this menu:

- Reset to Factory settings
- Delete data

Diagnostics screen



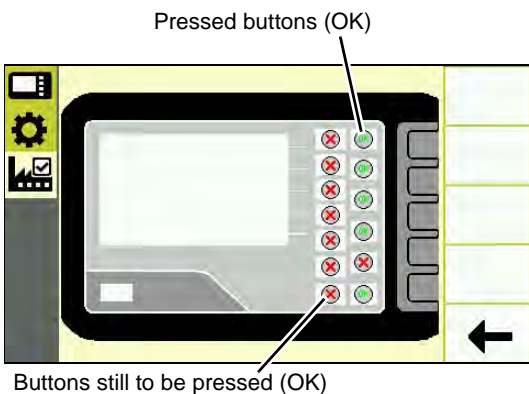
Reading data on the control box

The battery voltage, internal temperature and software version, among other information of the control box, are displayed here.

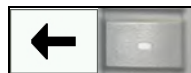
Buzzer test

Focus 3

Buttons test



- **Button control screen**
In this screen, you can test the working of all buttons of the control box.
- ▶ **Press all buttons (X) shortly to exit the screen.**
Every pressed button is confirmed as OK in the screen.



Exit menu after control button (lower button)

Set Image and Sound

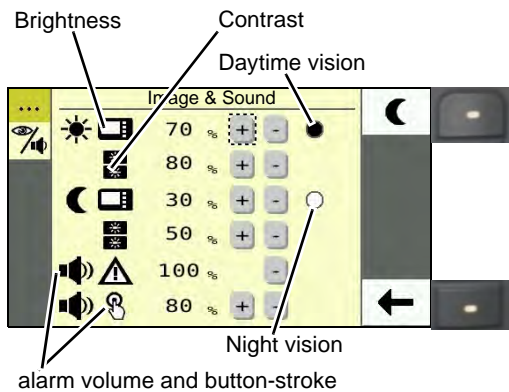
Set daytime and night vision and sound

Brightness and audio signal can be set as per the user's requirements.

Set brightness and contrast



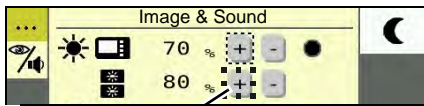
- ▶ Open the "Image and Sound" menu with the fixed button at the bottom right.



The menu offers:

- Choice for daytime or night vision (top button)
- Brightness setting of daytime/night vision position
- Contrast setting of daytime/night vision position
- Volume setting of button and alarm signal
- Exit menu (lowest button)

Select value that is modified



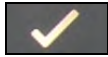
- The daytime and night vision position each has adjustable brightness and contrast.
- Alarms and button-stroke each have an adjustable volume.



▶ Navigate to the cell with a modified value.



The cell +, modify contrast of the daytime vision, is framed.



▶ Increase the contrast with the “tick” button.

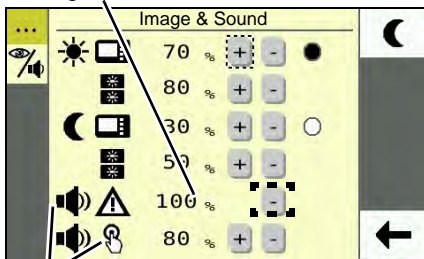
The new contrast is set to 80%.



Exit menu (lowest button)

Set volume

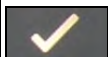
Change alarm volume



▶ Navigate to the cell with a modified value.

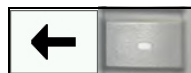


The cell has a frame.



▶ Decrease the volume with the “tick” button.

alarm volume and button-stroke















Exit menu (lowest button)

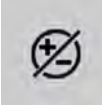







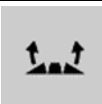






Control via an ISOBUS control unit
















The iXspray system supports control via another ISOBUS control unit (AUX-N). The IsoMatch Grip is most commonly used for this purpose because it is optimised for use with the iXspray software.
→ See the IsoMatch Grip manual.




However, any other ISOBUS control unit can also be used. The following machine functions can be programmed on an ISOBUS control unit:

Function list

Position	Icon	Function
1		Spray on/off.
2		Switch spray section on from the left.
3		Switch spray section off from the left.
4		Switch spray section on from the right.
5		Switch spray section off from the right.
6		Switch off the middle spray section.
7		Switch the border or bank nozzle on/off on the left.
8		Switch the border or bank nozzle on/off on the right.
9		Agitator on/off.
10		Switch between automatic and manual spray control.
11		Increase the application rate.
12		Reduce the application rate.

Position	Icon	Function
13		Reset the application rate to its pre-set.
14		Ignore the Task Controller's section switches.
15		Slope correction counter-clockwise.
16		Slope correction clockwise.
17		Independent slope correction, left up.
18		Independent slope correction, left down.
19		Independent slope correction, right up.
20		Independent slope correction, right down.
21		Independent slope correction both sides up.
22		Independent slope correction both sides down.
23		Spray boom to horizontal position.
24		Spray boom to transport position.
25		Spray boom up.
26		Spray boom down.
27		Unfold 1st fold function of spray boom.

Position	Icon	Function
28		Fold 1st fold function of spray boom.
29		Unfold 2nd fold function of spray boom.
30		Fold 2nd fold function of spray boom.
31		Unfold 3rd fold function of spray boom.
32		Fold 3rd fold function of spray boom.
33		Unfold 4th fold function of spray boom.
34		Fold 4th fold function of spray boom.
35		Block the spray boom.
36		Unblock the spray boom.
37		Lift the spray boom out of the transportation securing device. (HC spray booms only).
38		Lower the spray boom in the transportation securing device. (HC spray booms only).
39		Boomguide on/off
40		ERGODRIVE on/off
41		steer the wheels to the left
42		steer the wheels to the right

Position	Icon	Function
43		Steer the wheels to the centre position.
44		Tracking wheels on/off.
45		Toggle between Headland Curve Assist modes on/off/auto.

→ See the manual of the ISOBUS control unit for programming instructions on the control unit itself.

Almost all functions offered are copies of functions that on-screen buttons can also control. The relevant icon will indicate this. Not all functions are usable for every sprayer. It is possible to program the same function on multiple buttons because most functions appear several times in the function list.

Ignore Task Controller's section switching



Activating this machine function (pressing and holding the button) still opens sections that would otherwise be closed via the Task Controller. This temporarily ignores the Task Controller. Spray sections that have been manually closed will remain closed. There is no display control for this function. It is only available as a programmable function for ISOBUS control units.

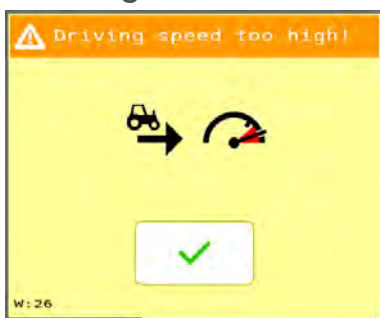
Alerts, warnings, notifications and dialogues

Alerts



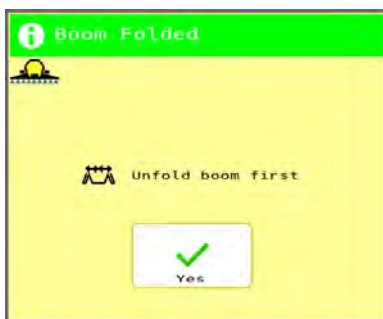
The red bar indicates an alert.
See table.

Warnings



The orange bar indicates a warning.
See table.

Notifications



The green bar indicates a notification.
See table.

If a function cannot be run since a given condition is not met, a message appears.

For instance when trying to unfold the spray boom without blocking it.

Dialogues



The grey bar indicates a dialogue.
See table.

Alerts, warnings, notifications and dialogues

Description	Content	Type	Cause
Actuator output:	12 V low	alarm	The measured 12 V actuator supply voltage on the iXspray PCB is lower than 9.0 V.
Actuator output:	5 V low	alarm	The measured 5 V actuator supply voltage on the iXspray PCB is lower than 4.5 V.
ECU output:	12 V low	alarm	The measured 12 V ECU supply voltage on the iXspray PCB is lower than 9.0 V.
ECU output:	5 V low	alarm	The measured 5 V ECU supply voltage on the iXspray PCB is lower than 4.5 V.
Front steering sensor	Steering limit exceeded	alarm	The value of the front wheel sensor is lower than 20 or higher than 900 counts. Not working on the steering calibration page.
Rear steering sensor	Steering limit exceeded	alarm	The value of the rear wheel sensor is outside the configured range of + and - 70 counts. Example: if the range is 100-500-100, then the configured range is 330 to 670.
Central steering	Central position not reached	alarm	If the centre position of the wheels is not reached within a certain period of time after activating auto-mid-steer mode.
Pump speed	Pump RPM too high (>600 RPM)	alarm	The spray pump speed exceeds 600 RPM. To avoid temporary spikes, this alert becomes visible after 3 seconds.
Valve position:	Not in position	alarm	An automatic valve (suction or pressure valve) has not reached the required position. Only when the "valve feedback" parameter is enabled?
Boom height	Boom out of sensor range	alarm	The boom height sensor value is less than 40 or more than 982.
Autosteer mode error (self-propelled machine)	Steering mode unchanged	alarm	Indicates a communication issue with the self-propelled machine's control system. (from version 1.12)
Nozzle communication	No communication	alarm	Triggered after hypro-communication error.
Reconnecting TC	Uploading changes to the task controller	alarm	Connection to Task Controller is required again due to the configuration change of the machine section. (From 1.11)
Tank (iXclean Pro)	The tank is not empty	warning	The tank level should be below 10 L for proper cleaning.

Alerts, warnings, notifications and dialogues

Service pump	Replace pump diaphragms	warning	This warning is displayed after 400 hours or two years.
Reconnecting TC	Uploading changes to the task controller	notification	Connection to Task Controller is required again due to the configuration change of the machine section. (From version 1.12: notification instead of alarm)
Automatic steering off	Automatic steering away. The wheels will centre.	notification	Folding the boom while autosteer is active. Triggers also display alarms when steering limits are exceeded, but this is a bug (SED3721-3377).
PTO shaft off	Switching the PTO shaft off	notification	in the final step of iXclean and ENFO for circulation booms.
Boom locked	Unlock the boom first	notification	An action requiring a locked boom is initiated. Actions not allowed with a locked boom: - activating slope correction.
Boom unlocked	Lock the boom first	notification	An action requiring an unlocked boom is initiated. Actions not allowed with an unlocked boom: - activating folding 1 or 2 (inner boom parts).
Unfolding the boom	Unfold the boom first	notification	Unfolding the boom is required before releasing the pendulum locking.
Boom height	Minimum height	notification	The boom is at its minimum height and the user tries to lower it.
No steering	Speed too high for steering	notification	When the steering is activated, but the speed is too high to steer. With arms folded and manual steering, the speed is too high to steer at over 6 km/h.
Steering limit	Maximum angle:	notification	The user tries to steer when the wheels are already at the maximum angle.
Set valves	Put valves in the indicated position	notification	The user must set the suction/pressure valve to a specific position.
Folded boom	Unfold the boom first	notification	The user tried to switch on ERGODRIVE while the spray boom was folded.
Change nozzle	Preset changed, nozzle replaced!	notification	User switches to a pre-set that requires the use of a different nozzle.
NO 4-wheel steering	Switch on four-wheel steering first	notification	This switch is activated when the machine is self-propelled and the 4WS switch is not on.

Alerts, warnings, notifications and dialogues

User spray nozzles	All user-defined spray nozzles will be deleted. Continue?	dialogue	All custom nozzles are reset to factory settings when the user attempts to reset them.
Total lifespan	Was the area sprayed again this season?	dialogue	When user tries to reset the season counter.

Troubleshooting table

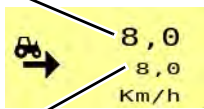
Problem	Possible cause	Solution	Page
Incorrect spray volume (l per hectare)	Spray volume set incorrectly.	Set the spray volume as per the instructions.	31
	Nozzle placement not checked by gauging.	Carry out the gauging.	132
	Pressure regulator Flow meter	Check the pressure regulator and flow meter to ensure they work properly.	131
	Incorrect driving speed.	Check the speed measurement.	128
	Incorrect distance between driving tracks.	Always set the driving tracks before spraying.	
Fill-/rinse function is not executed correctly.	Error in the settings for fill-/rinse function.	Check the settings for the fill-/rinse function.	52
Wheel sensor, flow sensor not working.	Incorrect machine casing connection.	Is 12 V voltage present on the connecting bus of the machine casing for the sensor? * Is the sensor diode lit? (not on flow sensor). Check the input signal on the machine casing. * Does the sensor work in test run? Are all cables correctly connected?	
Driving speed display incorrect.	Speed sensor not working or setting is incorrect.	Is the sensor working? Does the off position work? Wheel /radar setting correct? Is the calibration done correctly? Is the system set for working with the simulation speed?	128
No spraying pressure information.	Pressure sensor not working.	Is 5/12 V voltage present on the connecting bus of the machine casing for the sensor? * Are all cables correctly connected? Calibration done correctly	126
Flow display incorrect.	Flow sensor not working correctly.	Check the sensor for proper working. Is the computer set up for "flow quantity"? Is the calibration done correctly?	126
No data transfer.	Malfunctioning in one of the components.	Is the feed working? Are all cables correctly connected? Does the Run-LED on the printed board of the machine casing flash? * Does the Run-LED on the printed board of the control box flash? *	

Problem	Possible cause	Solution	Page
The sprayer deviates from a straight line during the pass.	The automatic steering system is not returning to the central position.	Calibrate the automatic steering system.	
The sprayer deviates too far from the tractor track while turning at the headland.	The steering reaction is not correct.	Set the steering reaction again.	
The slope correction is not properly returning to the central position after spraying is stopped.	Central position calibrated incorrectly.	Perform a new calibration.	
Spraying does not connect to the headland.	Ergodrive setting is not correct.	Set the base turning length again.	97
	GEOCONTROL set incorrectly.	Enter the correct implement values.	113
Screen displays wrong boom height.	The boom height sensor signal is not correct.	Calibrate the boom height sensor again.	
Boom height display is not accurate over the whole range.	The sensor is not fitted correctly.	Have the sensor checked to see if it is correctly assembled.	
Boomguide menu is not displayed.	The menu is pushed to the background by another application.	Change the application with the button.	
iXspray control not working correctly.	Control error.	<p>Is the speed sensor working correctly?</p> <p>Do flow and pressure sensors work correctly?</p> <p>Is the setting "Throughput quantity/pressure" correct?</p> <p>Does the system work with simulation speed?</p> <p>Is the pressure regulator working correctly?</p> <p>Are all settings correct?</p> <p>Are all calibrations performed correctly?</p>	126
* All checks on the printed board in the machine / control box may only be performed by trained personnel!			

Troubleshooting

Working without odometer

Driving speed (normal display)



Simulation driving speed

Simulation driving speed for set application rate

If there is a defect in the speed sensor, working can continue in the automatic mode. The iXspray then automatically calculates with the set speed of the pre-set spraying task.

NOTE You must in such case drive at a constant speed (= simulation speed)!

► Read the simulation speed in the work screen “Spray” for this.

► Then drive at this driving speed via the tractor speed sensor.

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