



X20 Spray Rate Setup

X20 Product Selection Screen

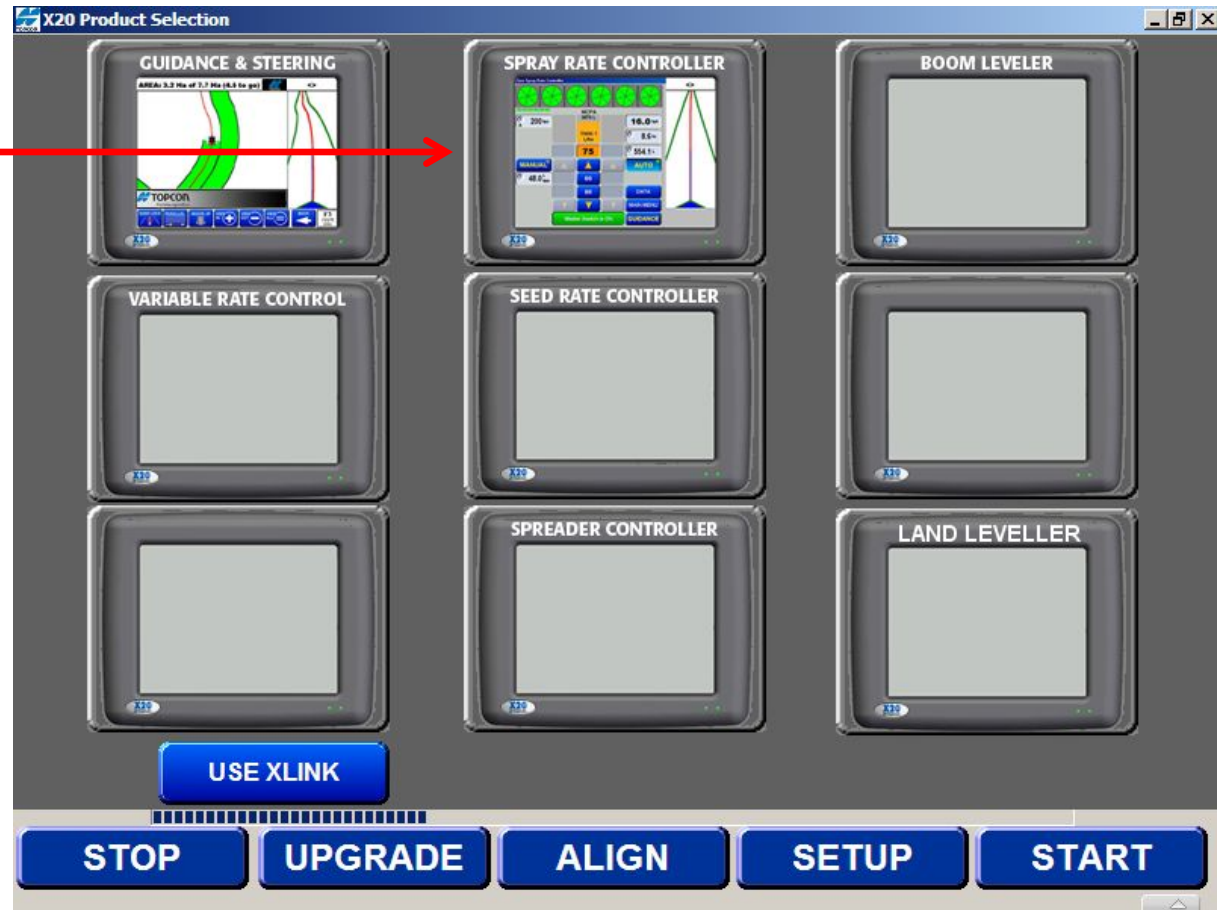
The spray rate program can be selected here

The product selection screen is also where you are able to access the following:

Upgrade: Use this to upgrade the Topcon Software on the X20

Align: Use this to calibrate the touch screen

Setup: Use this to access the GPS, Languages, and System setup programs



Main Guidance Screen

Spray Rate control is able to be accessed by the mini view below

The Mini view displays the following information:

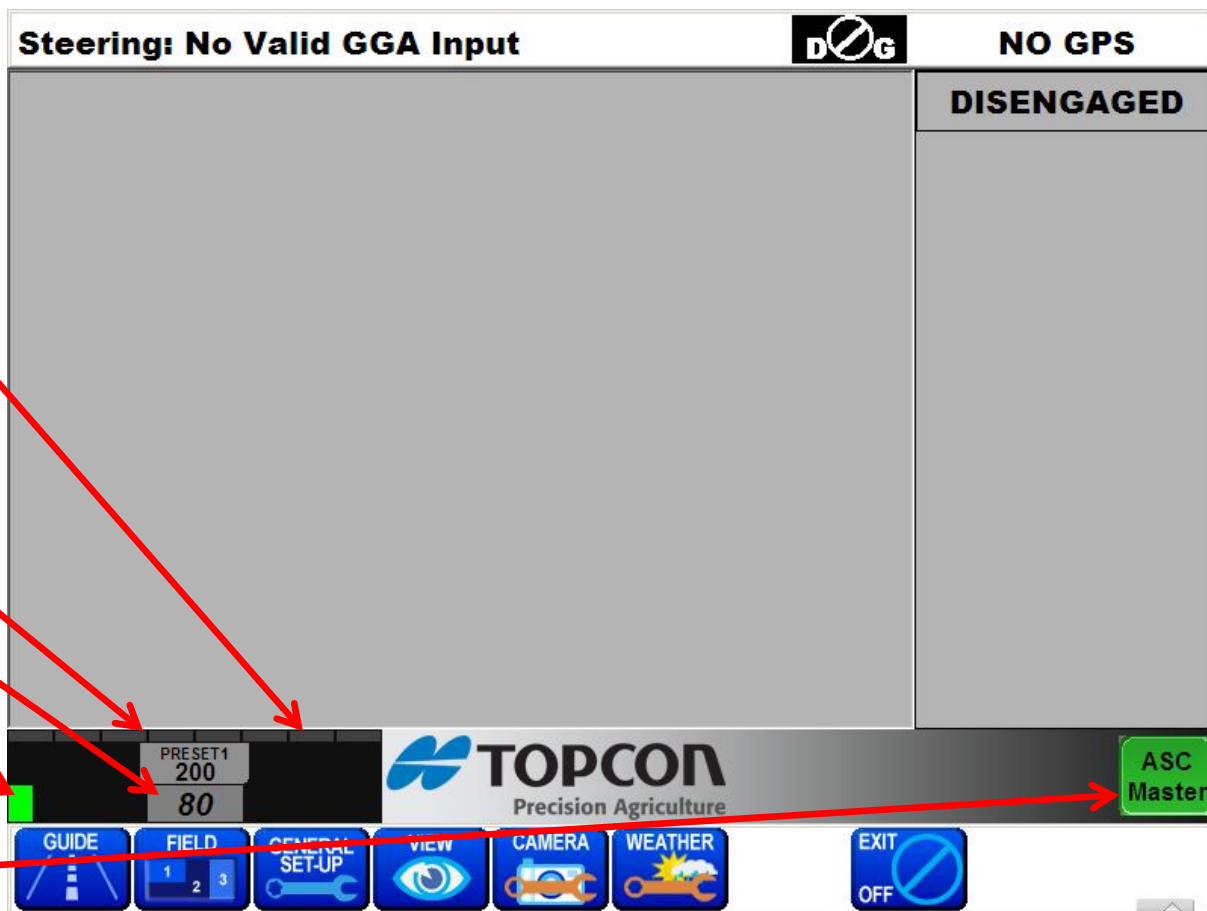
Sections that are currently activated

Current Product Name & Boom Pressure.

Current Rate & Actual Rate

Master Switch Status

The Auto Section Control (ASC) master switch can also be activated from the guidance screen



Spray Rate Control Screen

The main Spray Rate Control Screen displays the following information:

Section Status:

Grey = Off

Red = ASC Active / Low Speed

Green = Section On

Boom Pressure

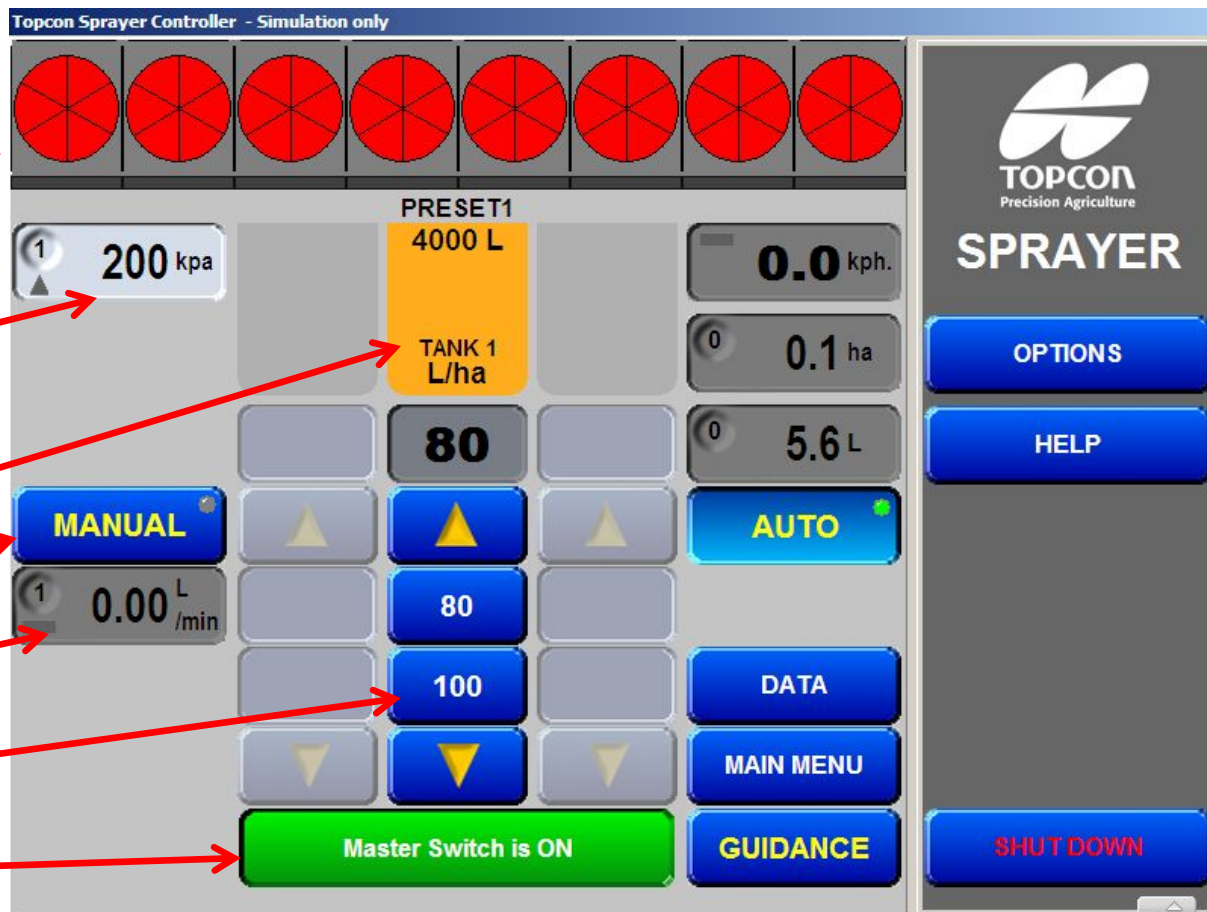
Tank Volume & Product Name

Manual / Auto Control

Volume /Minute or /Nozzle

Actual Rate & Preset Rates

Master Switch Status



Topcon Sprayer Controller - Simulation only

Section Status: 8 red indicators

Boom Pressure: 200 kpa

Tank Volume & Product Name: PRESET1 4000 L, TANK 1 L/ha

Manual / Auto Control: MANUAL (selected), AUTO

Volume /Minute or /Nozzle: 0.00 L/min

Actual Rate & Preset Rates: 80, 100

Master Switch Status: Master Switch is ON

SPRAYER

OPTIONS

HELP

DATA

MAIN MENU

GUIDANCE

SHUT DOWN

Spray Rate Control Screen

The main Spray Rate Control Screen displays the following information:

Ground Speed

Hectares Covered

Volume Used

Data List

Options Menu

Return To The Guidance Screen

Topcon Sprayer Controller - Simulation only

PRESET1
4000 L

TANK 1
L/ha

80

MANUAL

0.00 L/min

80

100

Master Switch is ON

0.0 kph.

0.1 ha

5.6 L

AUTO

DATA

MAIN MENU

GUIDANCE

TOPCON
Precision Agriculture

SPRAYER

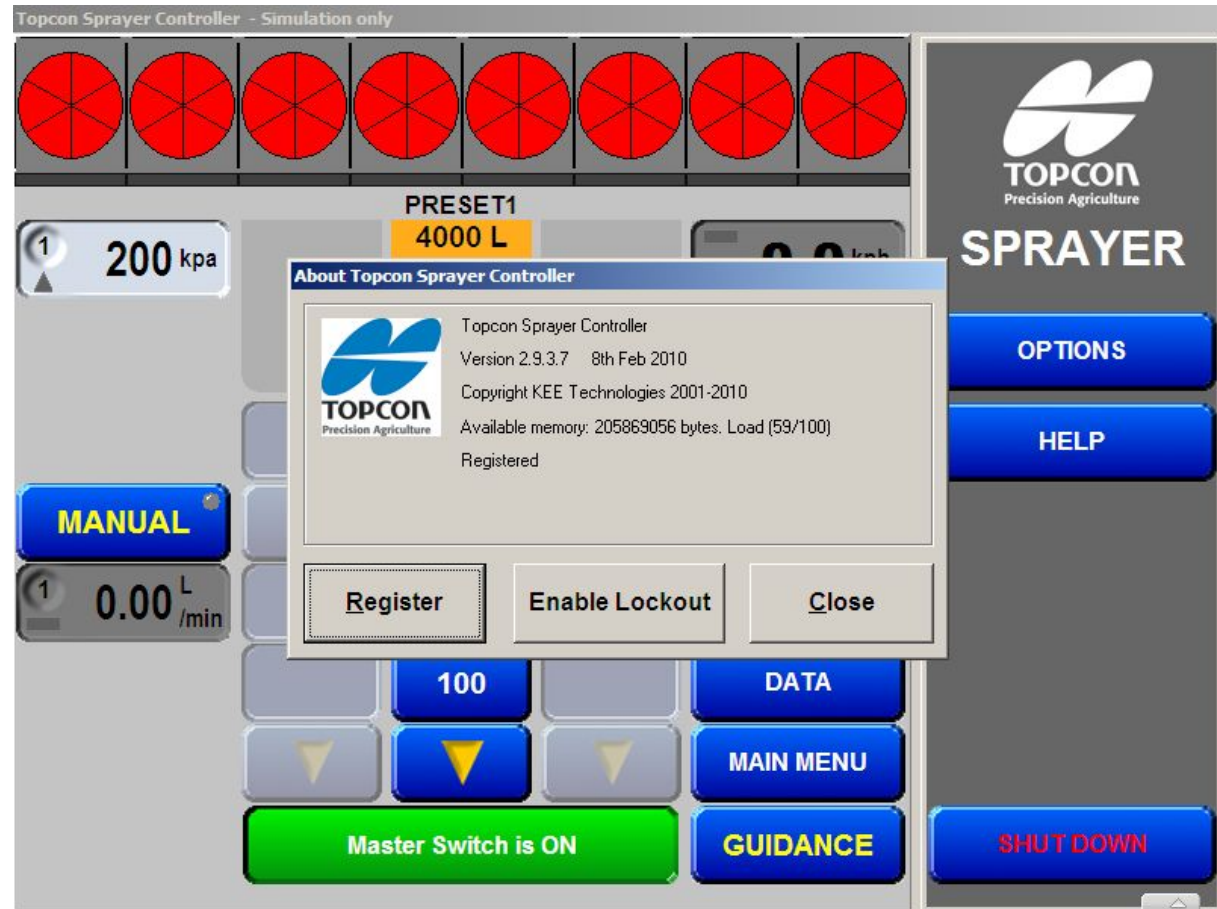
OPTIONS

HELP

SHUT DOWN

Spray Rate Version

By clicking on the Topcon Logo in the top right hand corner, the version number can be obtained. This is also where the product is registered.



Topcon Sprayer Controller - Simulation only

The interface features a top row of eight green circular gauges. Below them are several control panels:

- Pressure Panel:** A gauge on the left shows **200 kpa**. A central panel displays **PRESET1 4000 L** and **TANK 1 L/ha**. A gauge on the right shows **0.0 kph.**
- Flow Rate Panel:** A gauge on the left shows **0.00 L/min**. A central panel shows **0.0**. A gauge on the right shows **0.1 ha** and **5.6 L**.
- Mode Panel:** A blue **MANUAL** button is on the left, and a blue **AUTO** button is on the right. Between them are four directional arrow buttons (up, down, left, right).
- Pressure Labels:** Two buttons labeled **Press.** are located between the flow rate and mode panels.
- Bottom Panel:** A green **Master Switch is ON** indicator is on the left, and a blue **GUIDANCE** button is on the right.



SPRAYER

OPTIONS

HELP

AUTO

DATA

MAIN MENU

GUIDANCE

SHUT DOWN

Sprayer Configuration

The sprayer configuration screen is accessed from the options tab.

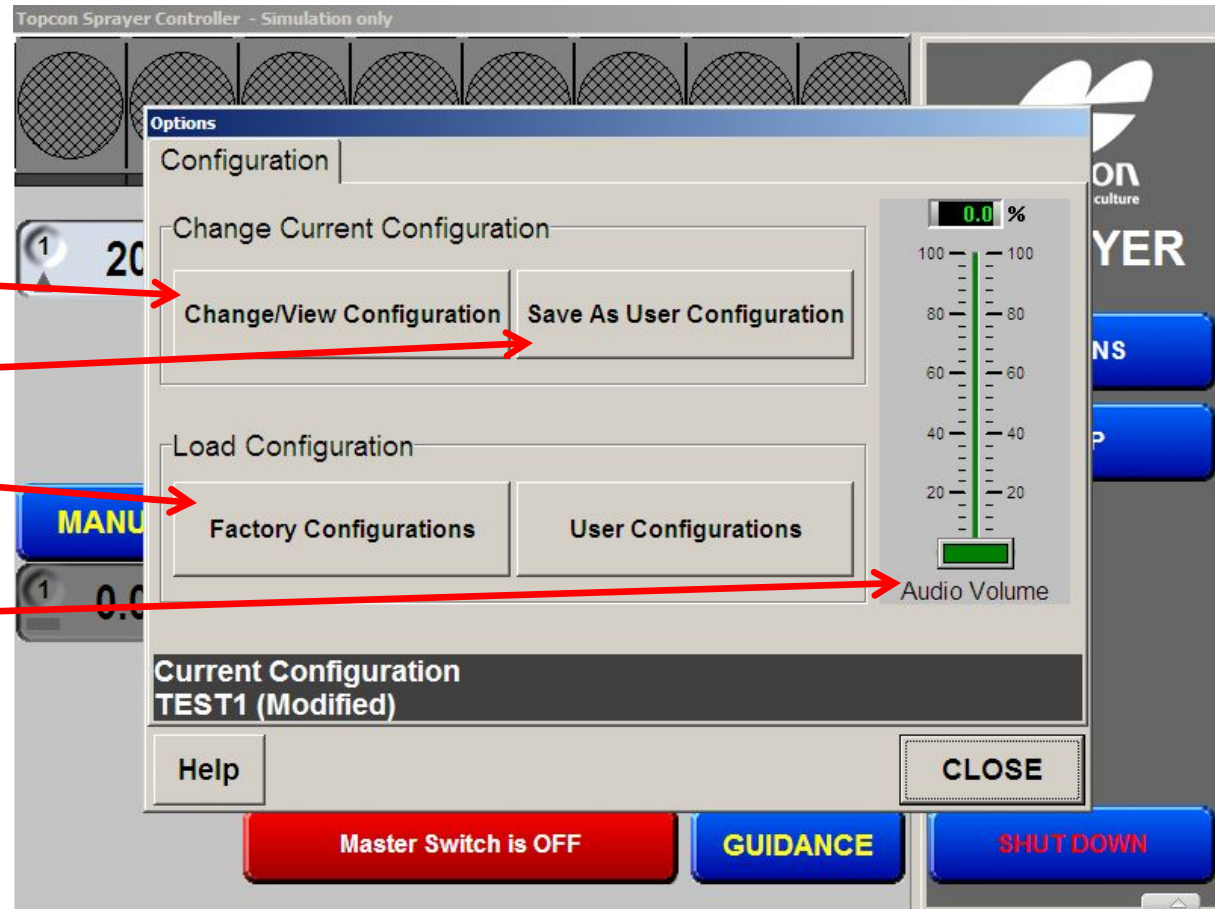
This allows the user to:

Change / View Configuration

Save As User Configuration

Or Reload Factory & User Configurations

The Audio volume can also be adjusted from here.



Sprayer Options

Auto Section Control

VRC Logging Mode

On Time:

The physical time it takes from powering up the valve until the correct spray pattern is produced

Off Time:

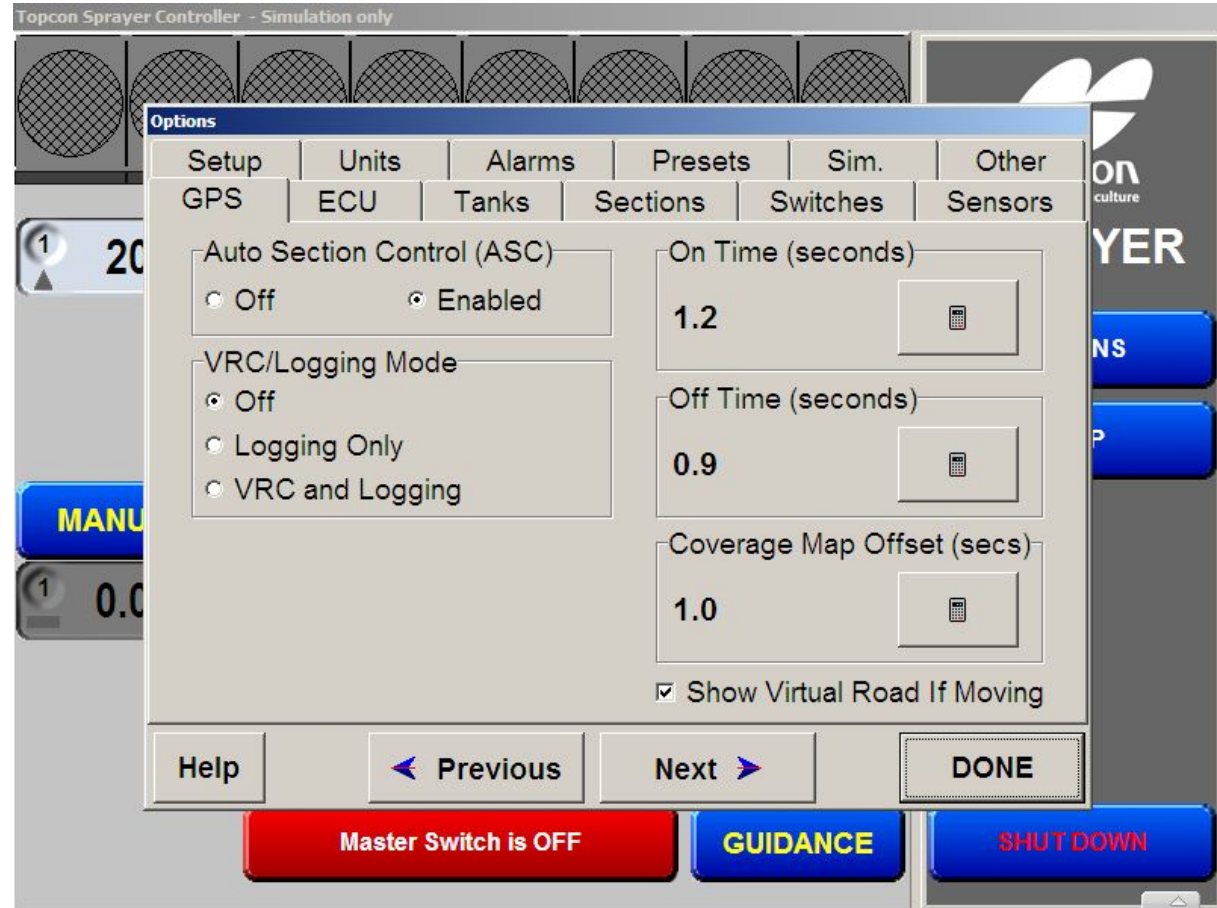
The physical time it takes for the chemical to stop flowing from the spray nozzle

Coverage Map Offset:

This is used to tidy up the stops and starts on the guidance map

Show Virtual Road:

Show the virtual road on the right hand side of the spray rate control screen when moving



Sprayer Options

ECU Options

Com Port:

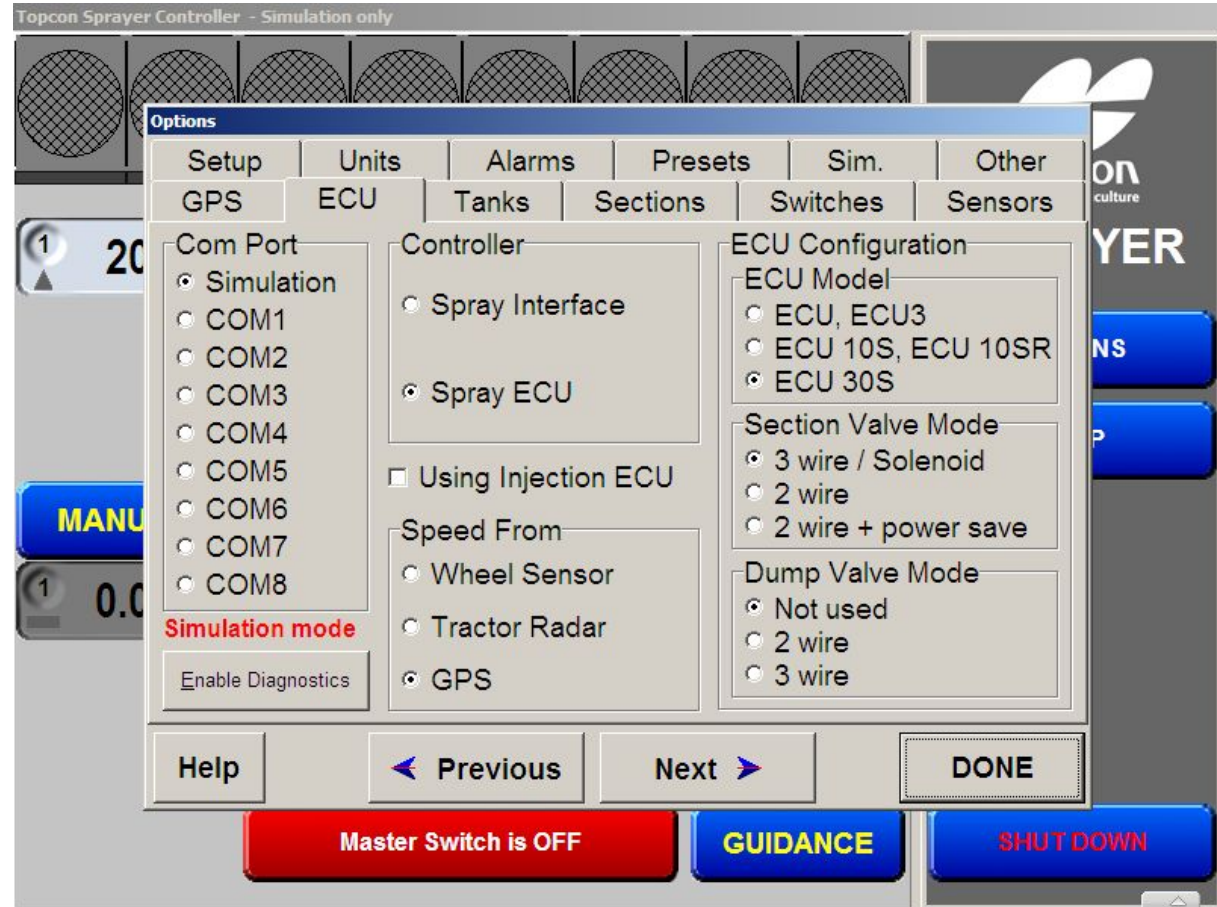
This should match where the com connector from the spray rate ECU is connected. If this is unable to be selected then the Sprayer software will need to be registered. Please contact your area rep for the release code

Controller Type:

Interface or ECU

Speed Source:

Wheel Sensor
Radar input or GPS input.



Sprayer Options

ECU Options

ECU Model

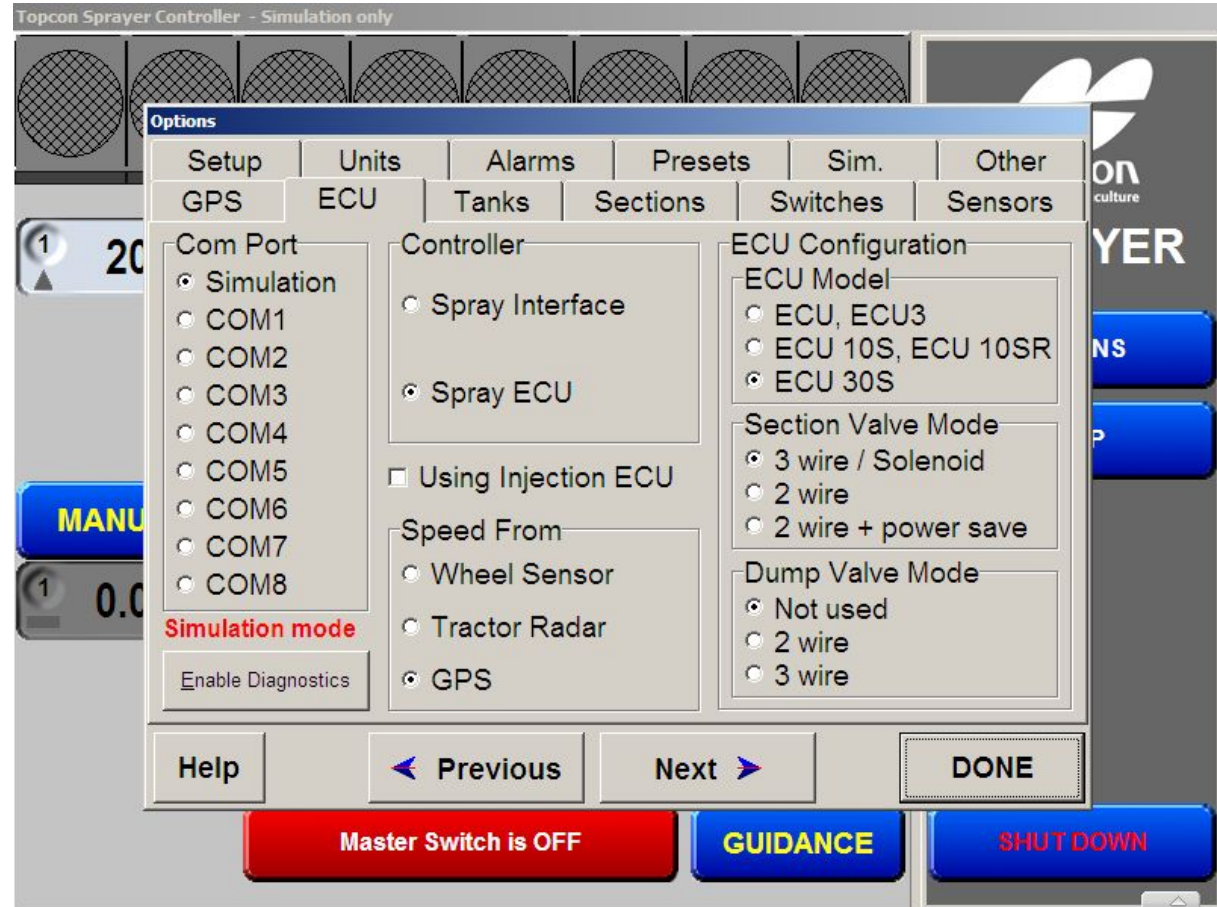
Select the correct type of ECU fitted, e.g. 30S

Section Valve Types

Select the type of sectional valves fitted

Dump Valve Types

Select the type of dump valve fitted.



Sprayer Options

Tank Options

Tanks

Three tanks can be supported

Pressure Sense

An optional pressure sensor can be enabled or disabled

Tank Mode

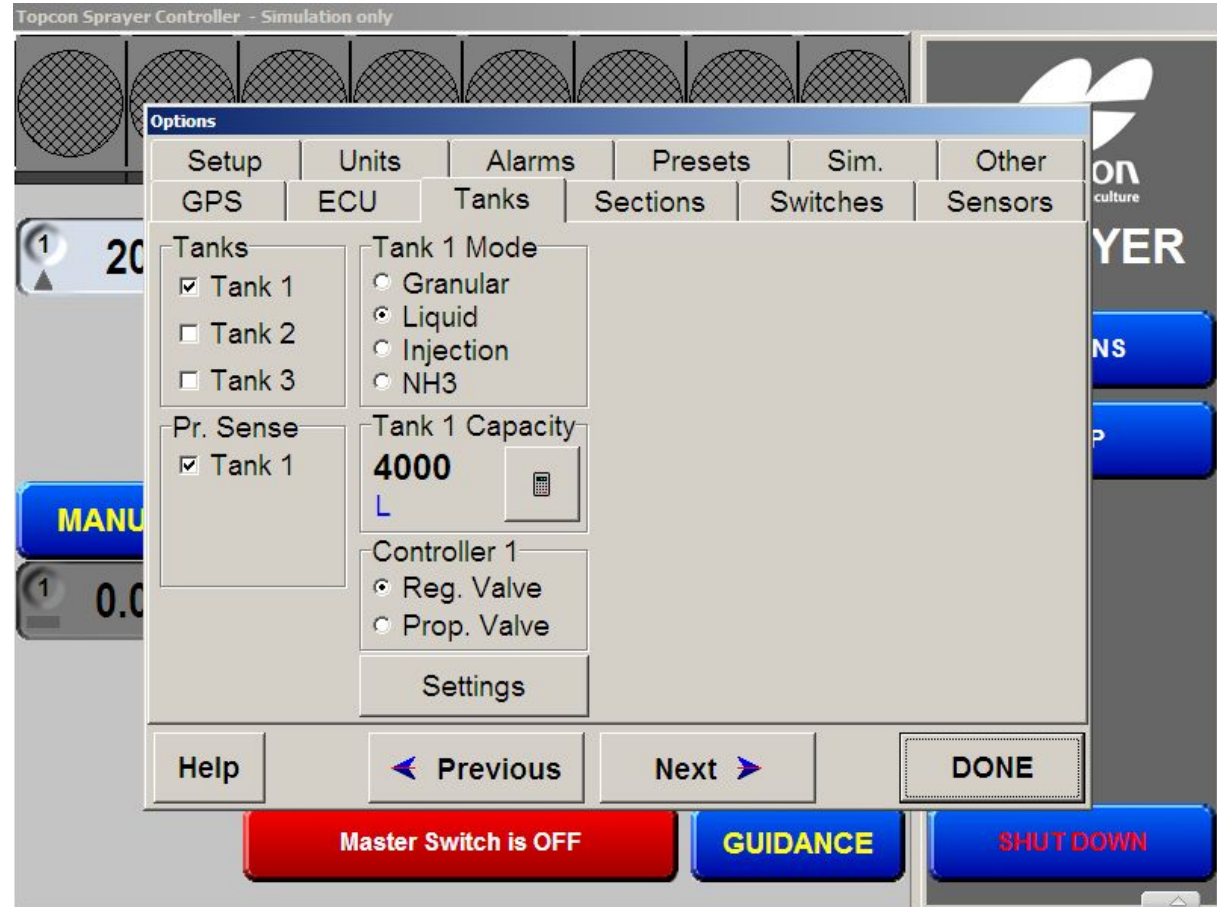
What sort of product control is required

Tank Capacity

Enter the tank capacity in liters

Controller Type

Regulator Valve or Proportional Valve



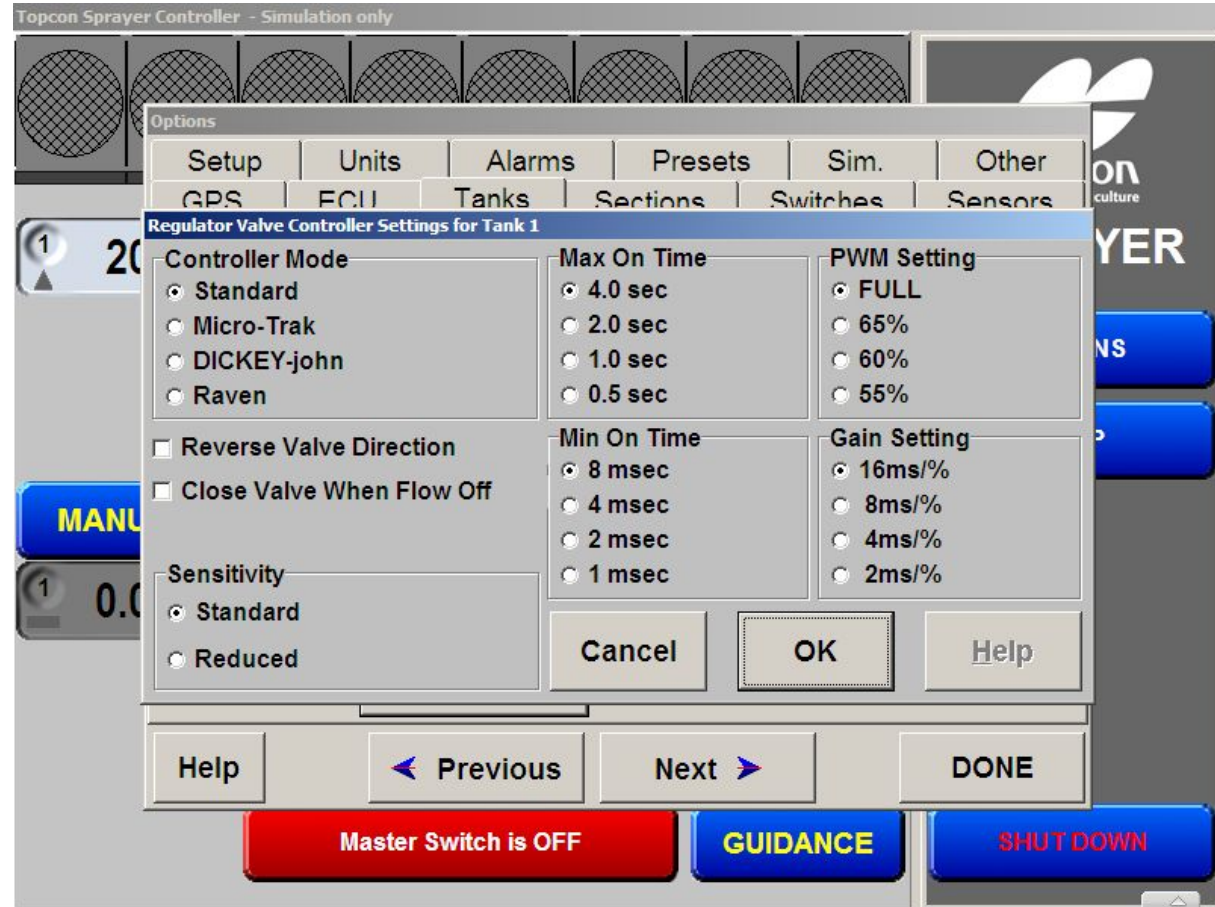
Sprayer Options

Regulator Valve

Standard will account for most 4 – 20 sec regulator valves. As a rule the faster the valve the lower the max & min on times will need to be.

Raven is to be used if a Raven Fast Close valve is fitted. This automatically adjust to the required settings

Please consult your operators manual if there is any doubt

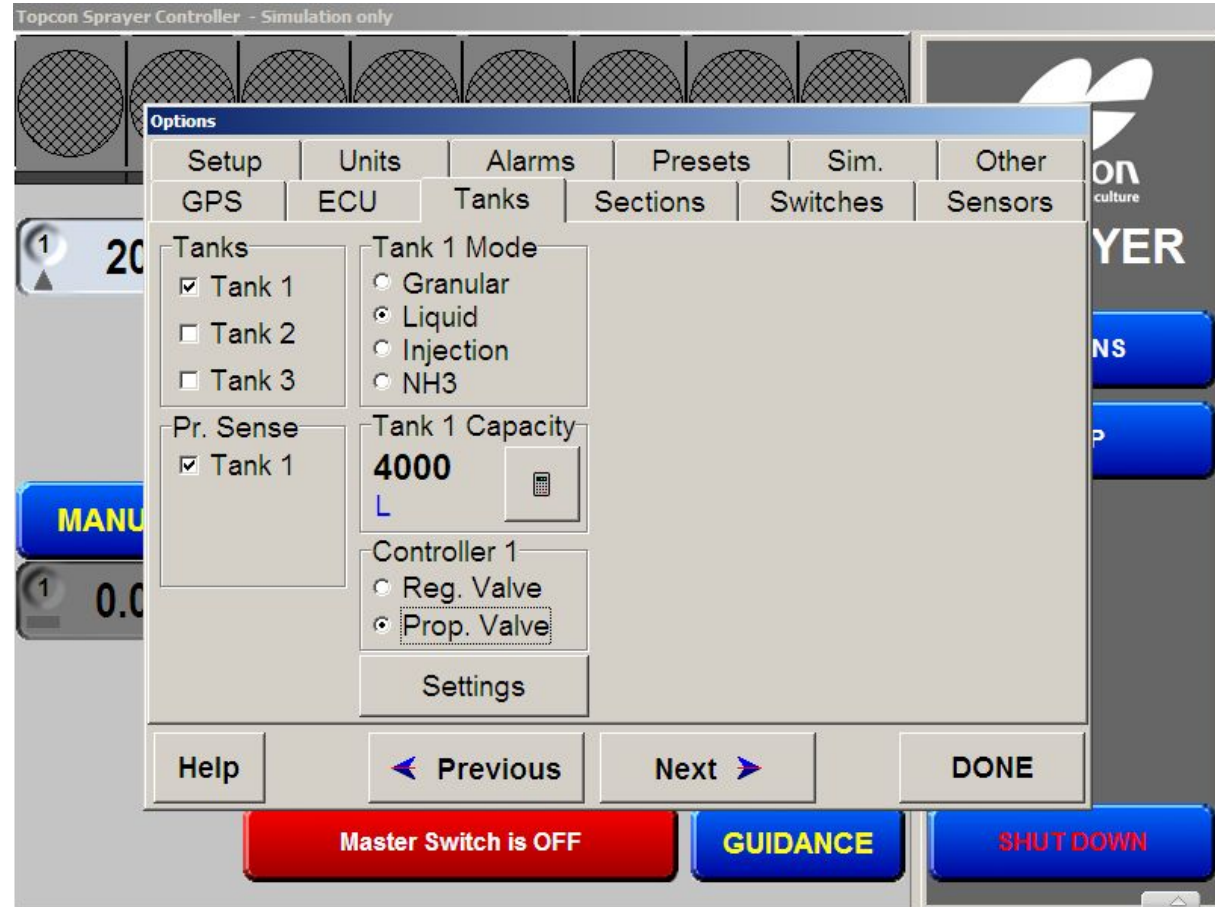


Sprayer Options

Tank Options

Controller Type

Proportional Valve can also be controlled



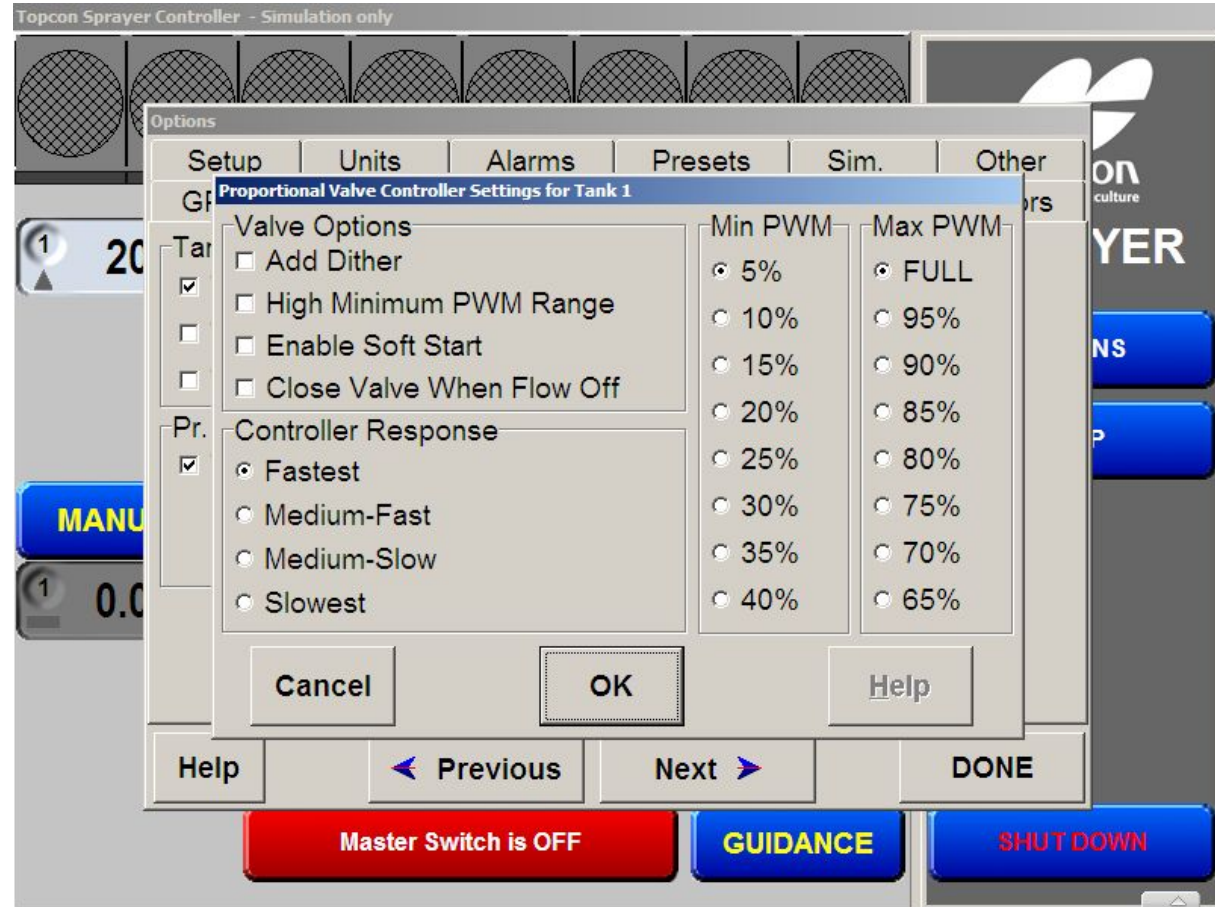
Sprayer Options

Proportional Valve

Valve options & controller response can be selected.

Min & Max PWM will need to be adjusted to eliminate dead band

Normal values range from 25% Min PWM to 75% Max PWM.



Sprayer Options

Sections

Number of sections & section widths

Number of Guidance sections

Single or Dual Lines

Balanced valves option

Number of nozzles

Min & Max flow per nozzle

The screenshot shows the 'Options' menu for 'Sections' in the 'Topcon Sprayer Controller - Simulation only' interface. The menu is divided into several sections:

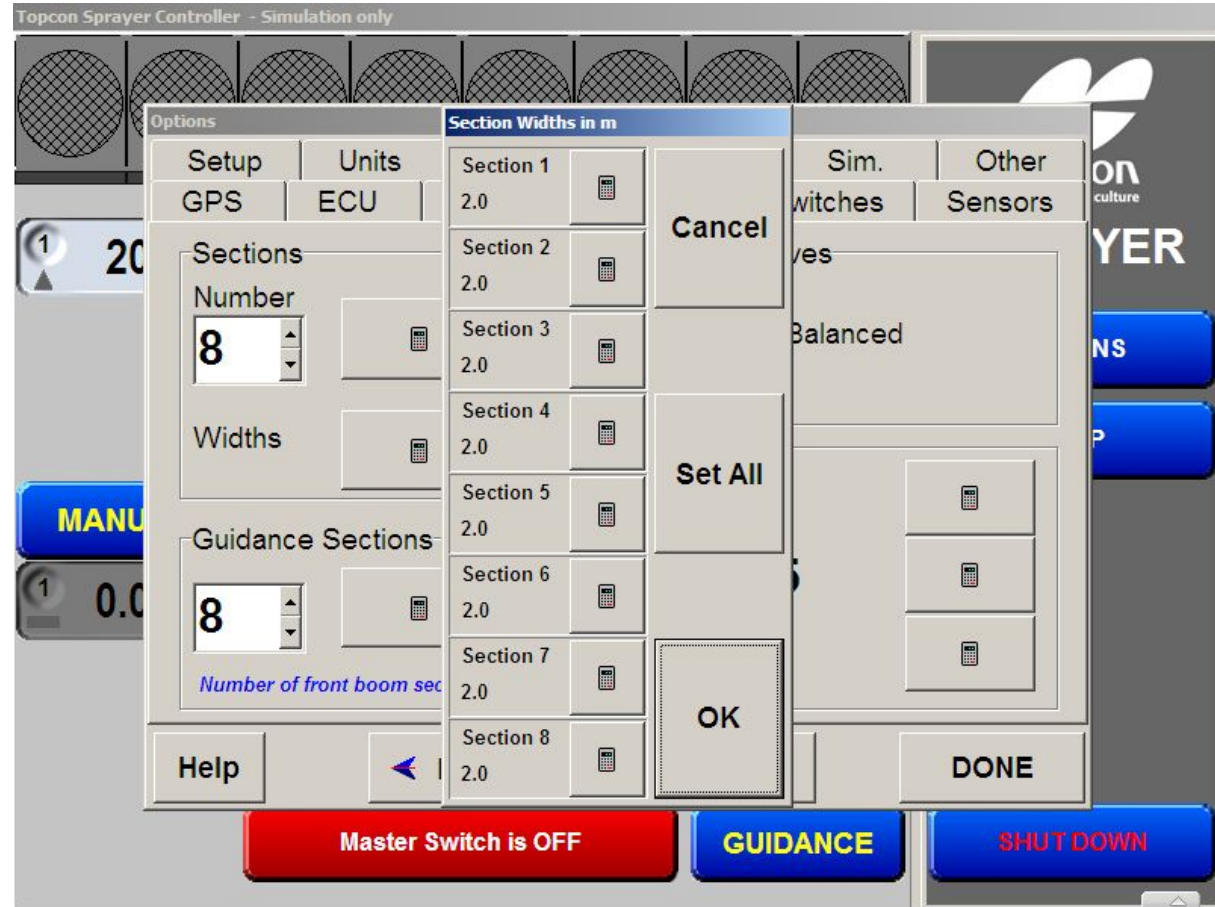
- Setup**: Includes GPS, ECU, Tanks, Sections, Switches, and Sensors.
- Sections**: Contains a 'Number' field set to 8, a 'Widths' field, and a 'Guidance Sections' field also set to 8. A note below the Guidance Sections field reads 'Number of front boom sections'.
- Lines**: Offers radio button options for 'Single' (selected) and 'Dual'.
- Valves**: Includes a checkbox for 'Balanced'.
- Nozzles**: Displays 'Total' as 32, 'Min. Flow' as 1.5 L/min per nozzle, and 'Max. Flow' as 0 L/min per nozzle. Each value has a calculator icon next to it.

Navigation buttons at the bottom include 'Help', 'Previous', 'Next', and 'DONE'. A red status bar at the bottom indicates 'Master Switch is OFF', and blue buttons for 'GUIDANCE' and 'SHUT DOWN' are visible.

Sprayer Options

Sections

Section widths can be entered in individually or grouped



Sprayer Options

Switches

External Master Switch

External Auto Switch

External Section Switch

Boom Sensing

Section Switches

Switch Mapping

Topcon Sprayer Controller - Simulation only

Options

Setup	Units	Alarms	Presets	Sim.	Other
GPS	ECU	Tanks	Sections	Switches	Sensors

External Master Switch

- Disabled
- Enabled

External Auto Switch

- Disabled
- Enabled

External Section Switch

- Disabled
- Enabled

Boom Sensing

- No sensing
- Six Boom Switchbox
- ECU Sense Inputs

Section Switches

0

Switch Mapping

- One Section For One Switch
- Preset Mapping
- Custom Section Mapping

External Switch UP is ON

Use Guidelock For Auto Steer

Switch To Section Mapping

Help Previous Next DONE

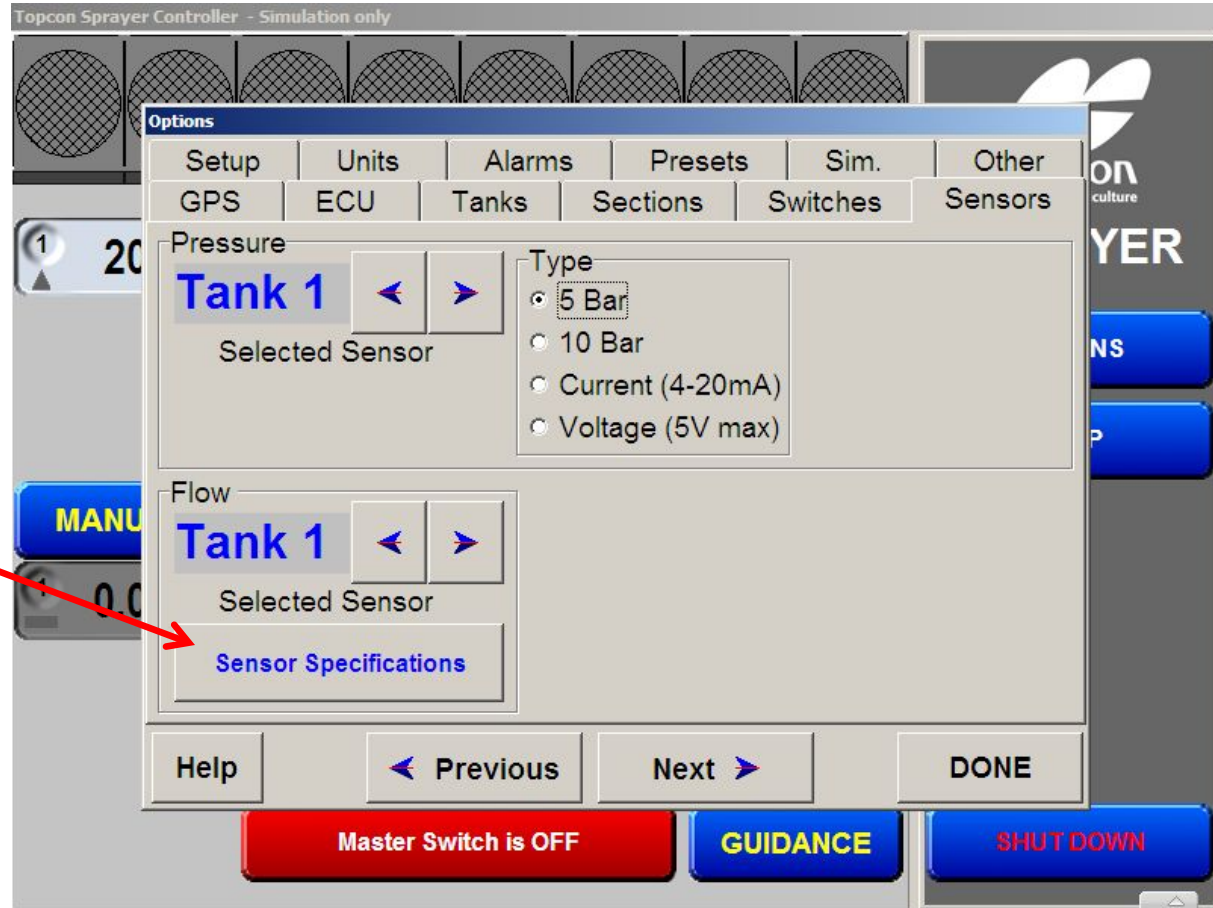
Master Switch is OFF GUIDANCE SHUT DOWN

Sprayer Options

Sensors

Pressure Sensor Type

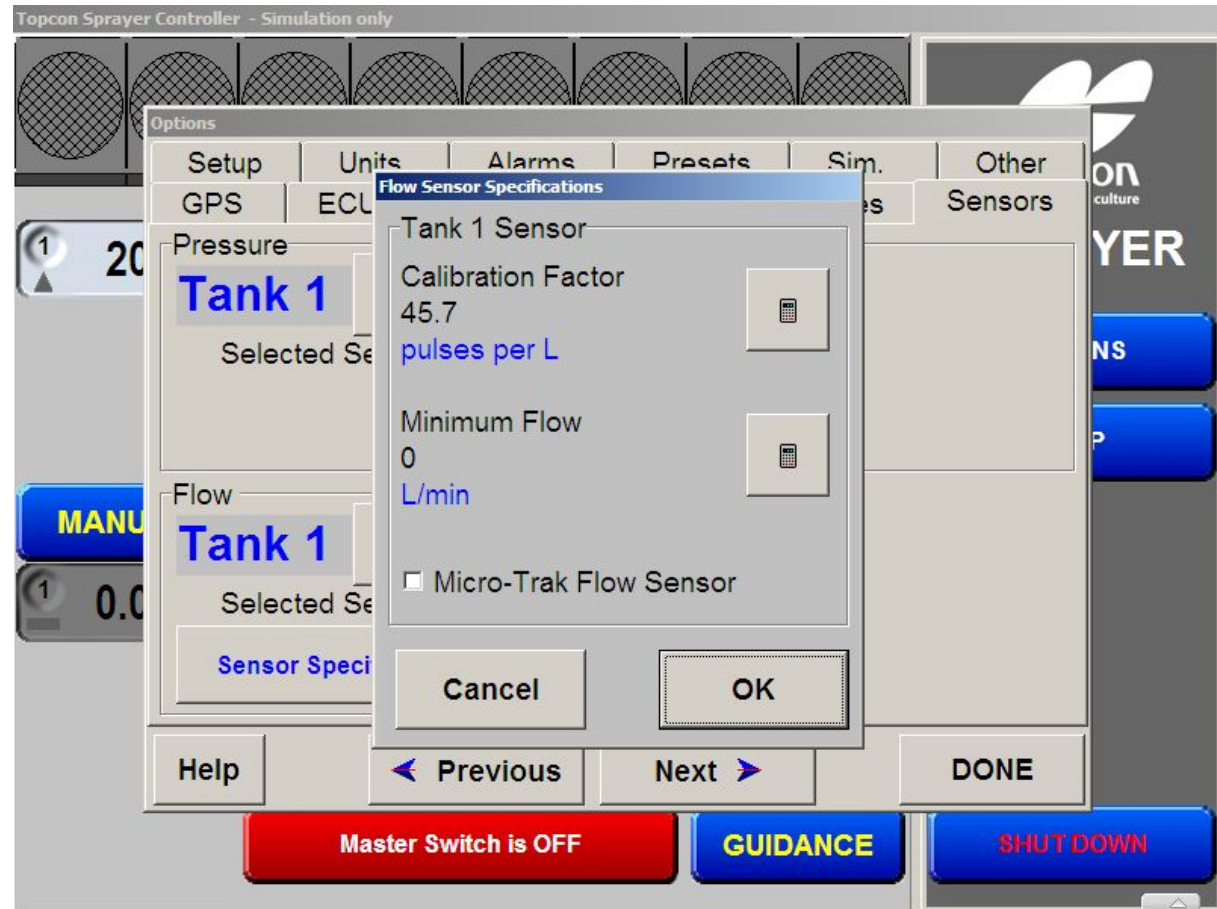
Flow Sensor Calibration
figure can be entered by
selecting Sensor
Specifications



Sprayer Options

Flow Sensor

Flow sensor calibration figure and min flow (stall rate) of the flow meter can be entered here



Sprayer Options

Setup

Wheel Calibration Factor

Enable Pump Speed Indicator

Enable Pump Control

Used to turn on & off the pump when running a proportional valve

Holding Pressure

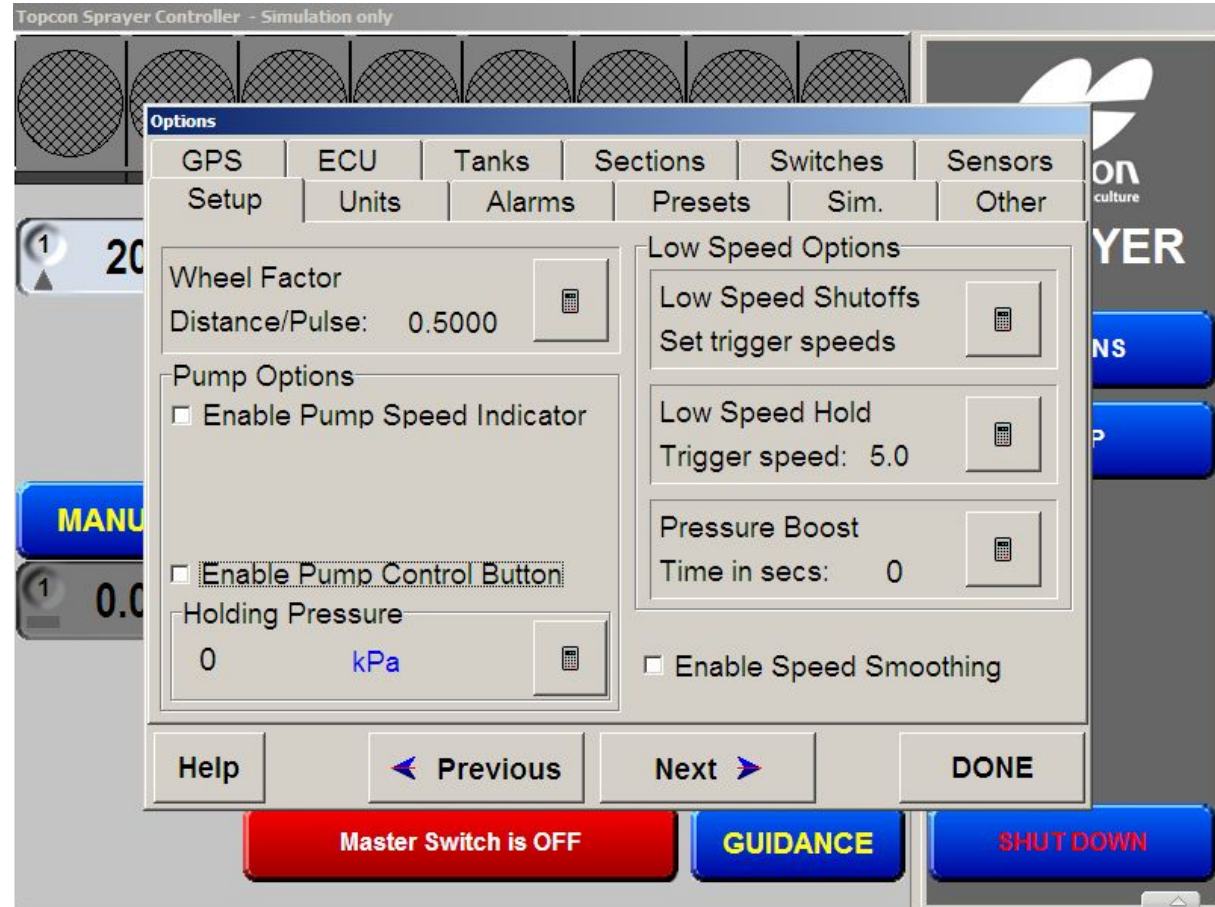
For future development

Low Speed Shut Off

Low Speed Hold

Pressure Boost

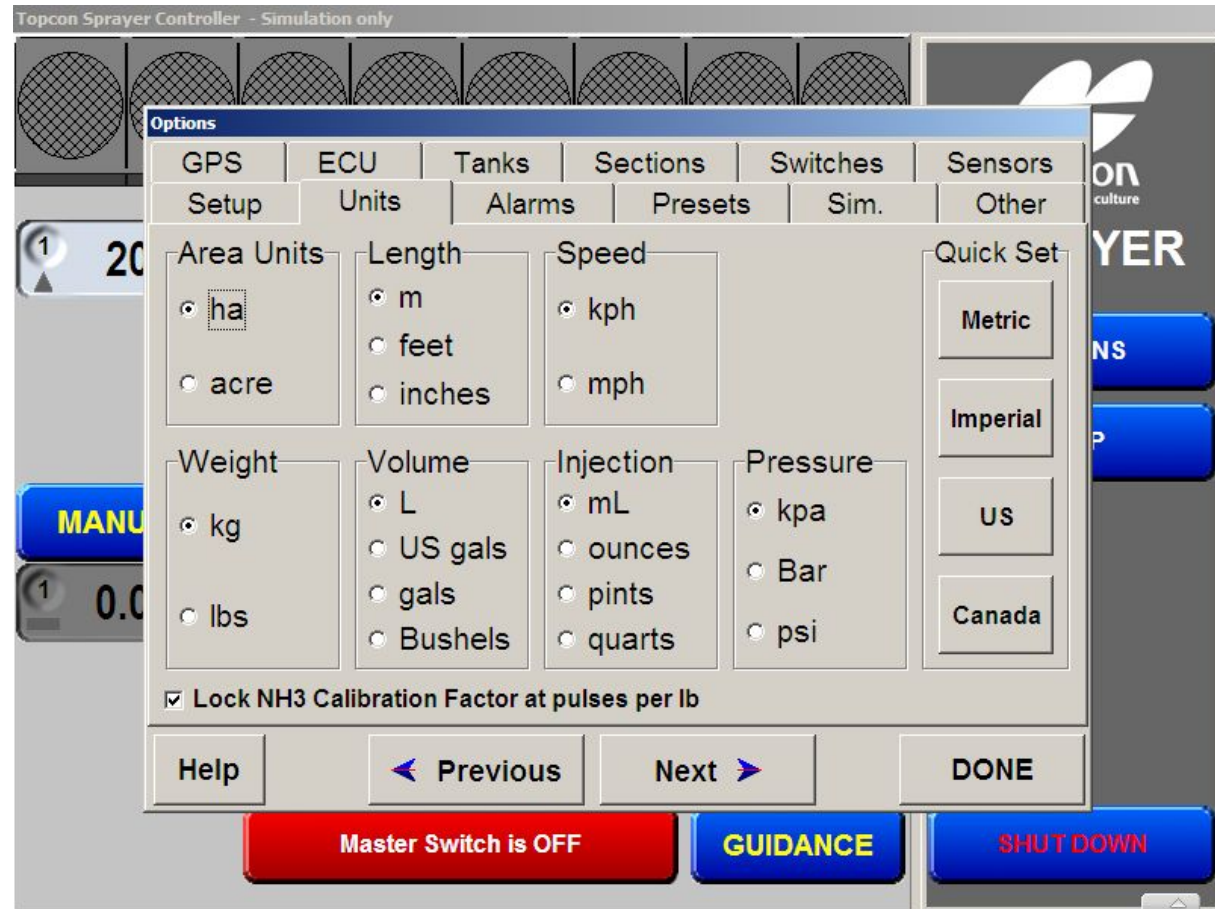
Enable Speed Smoothing



Sprayer Options

Units

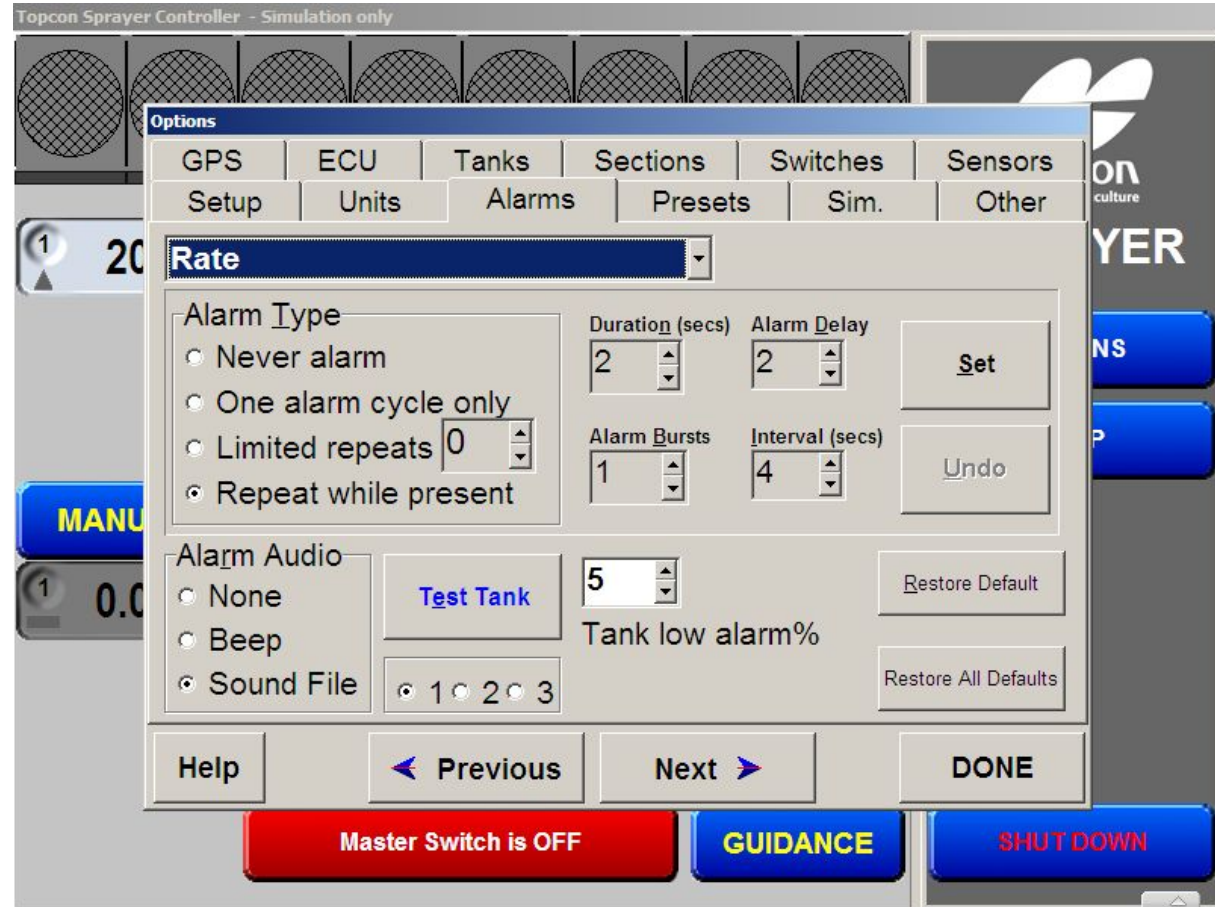
Required units are able to be selected to suit individuals requirements



Sprayer Options

Alarms

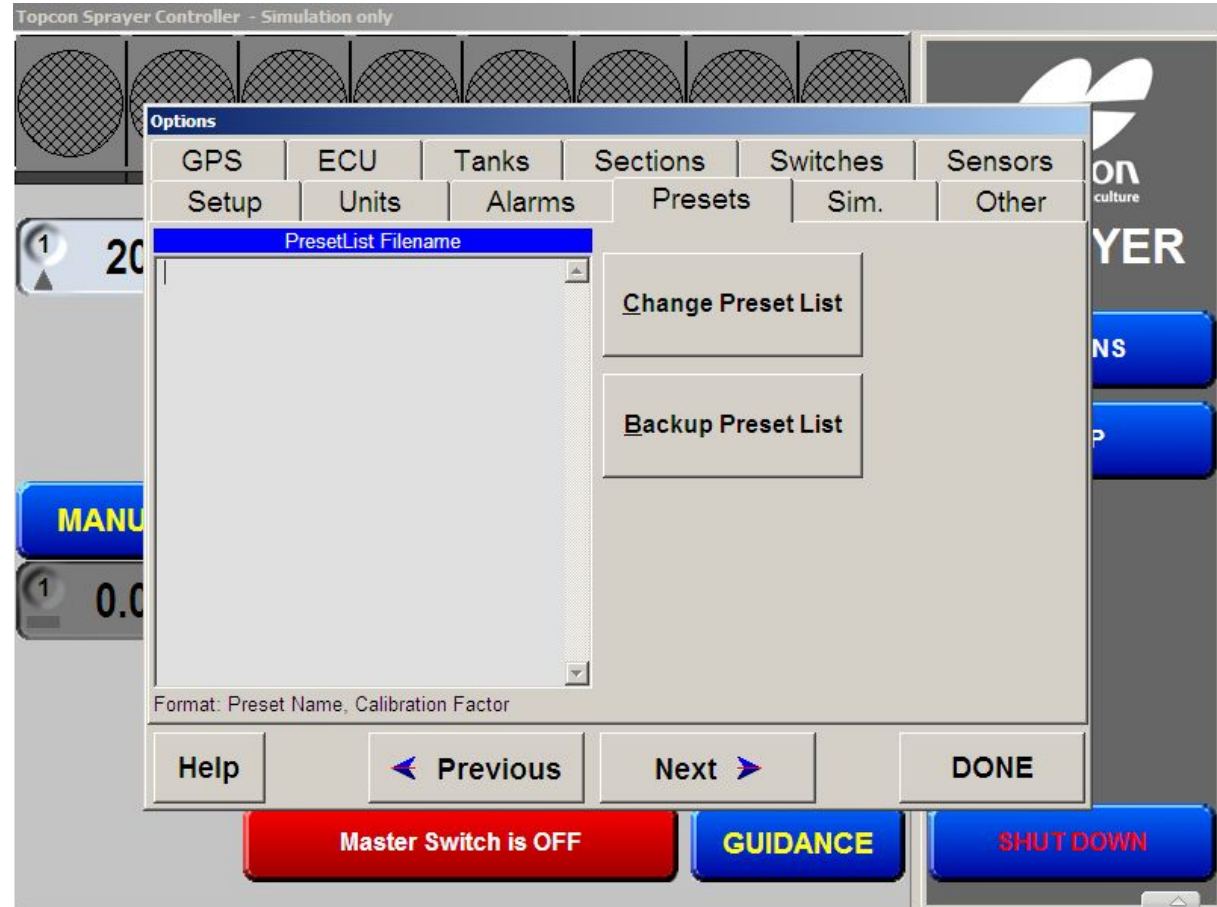
Each alarm is able to be selected and configured to suit the individuals requirements or to suit the machine



Sprayer Options

Presets

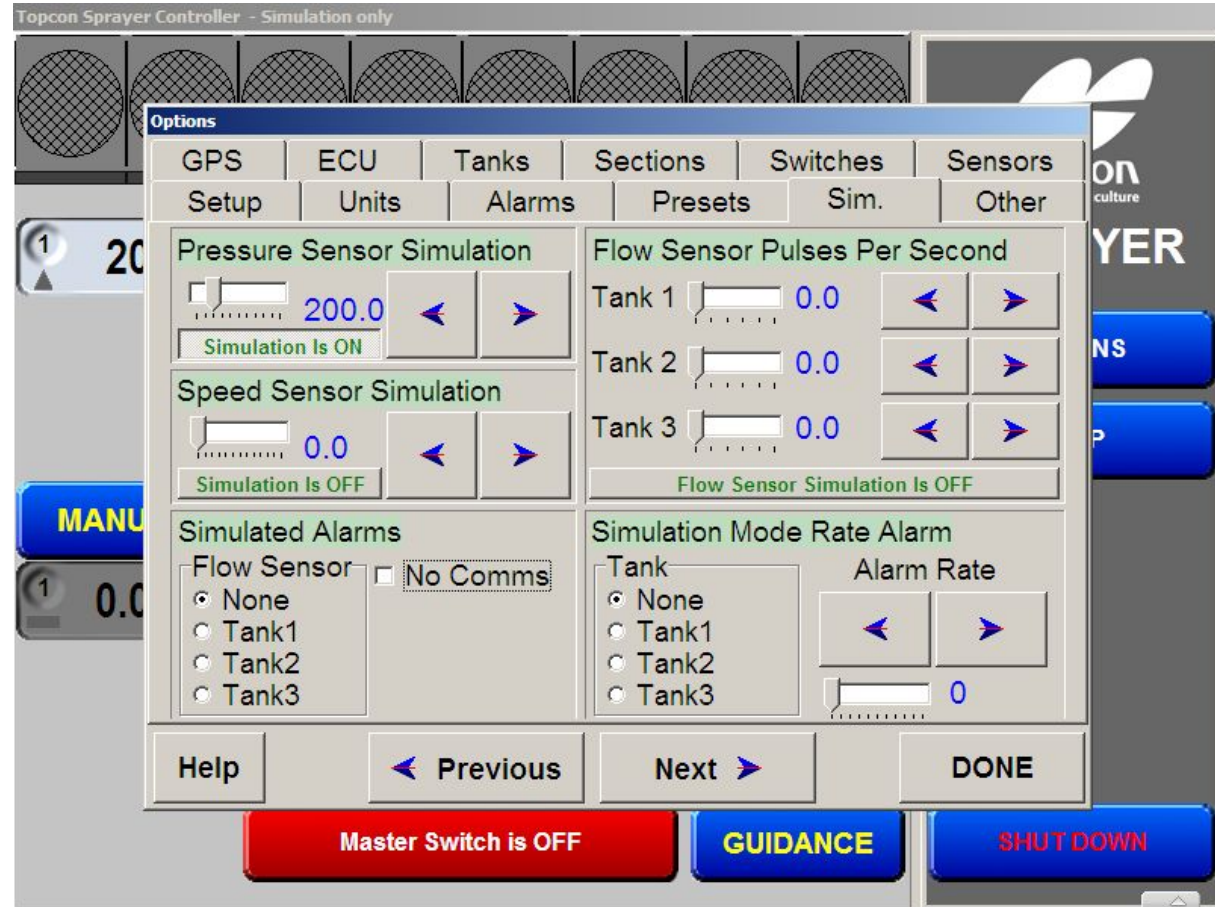
Individual Product Names are able to be configured and stored.



Sprayer Options

Simulation

Pressure, Speed, & Flow sensors are able to be simulated for display purposes.



Sprayer Options

Other

Language

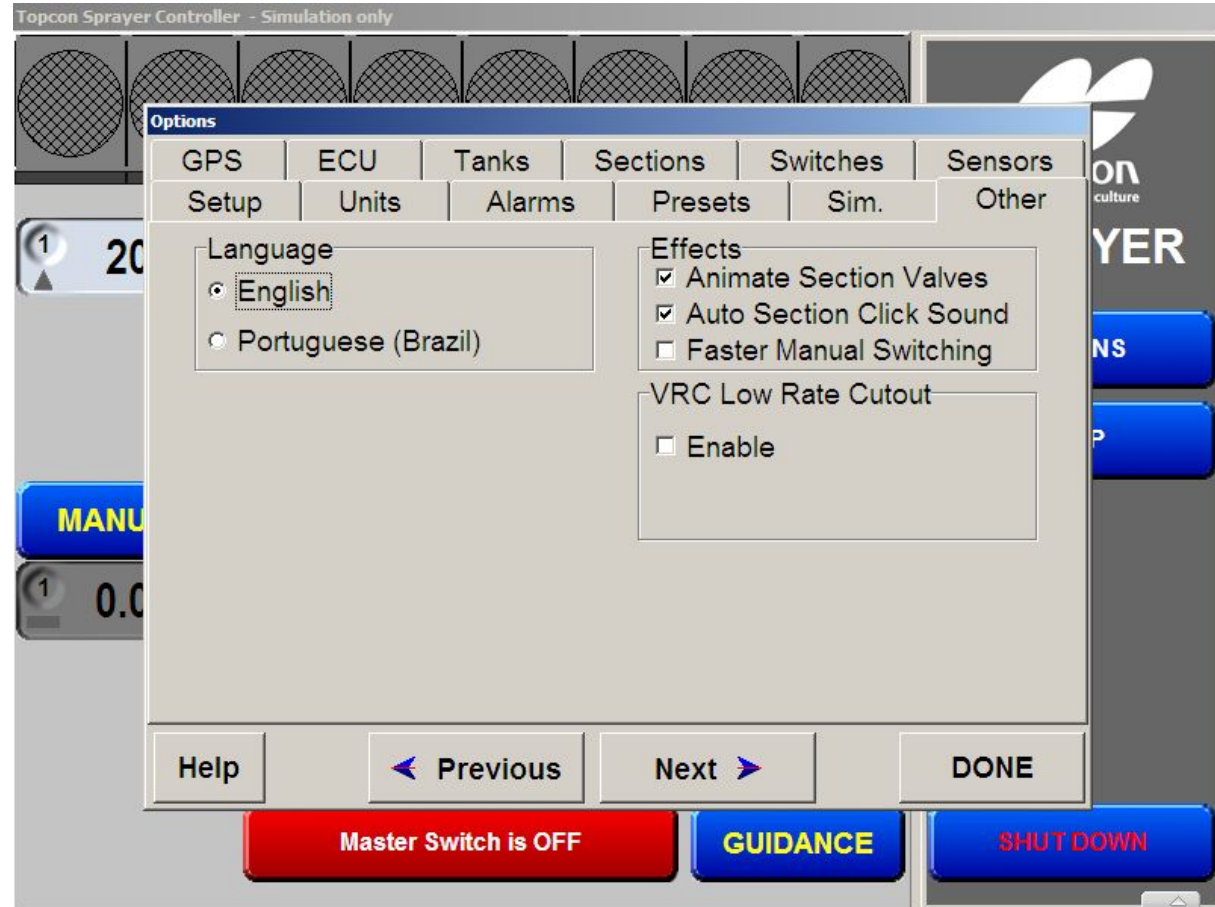
Effects

Animate Section Valves

Auto Section Click Sounds

Faster Manual Switching

VRC Low Rate Count

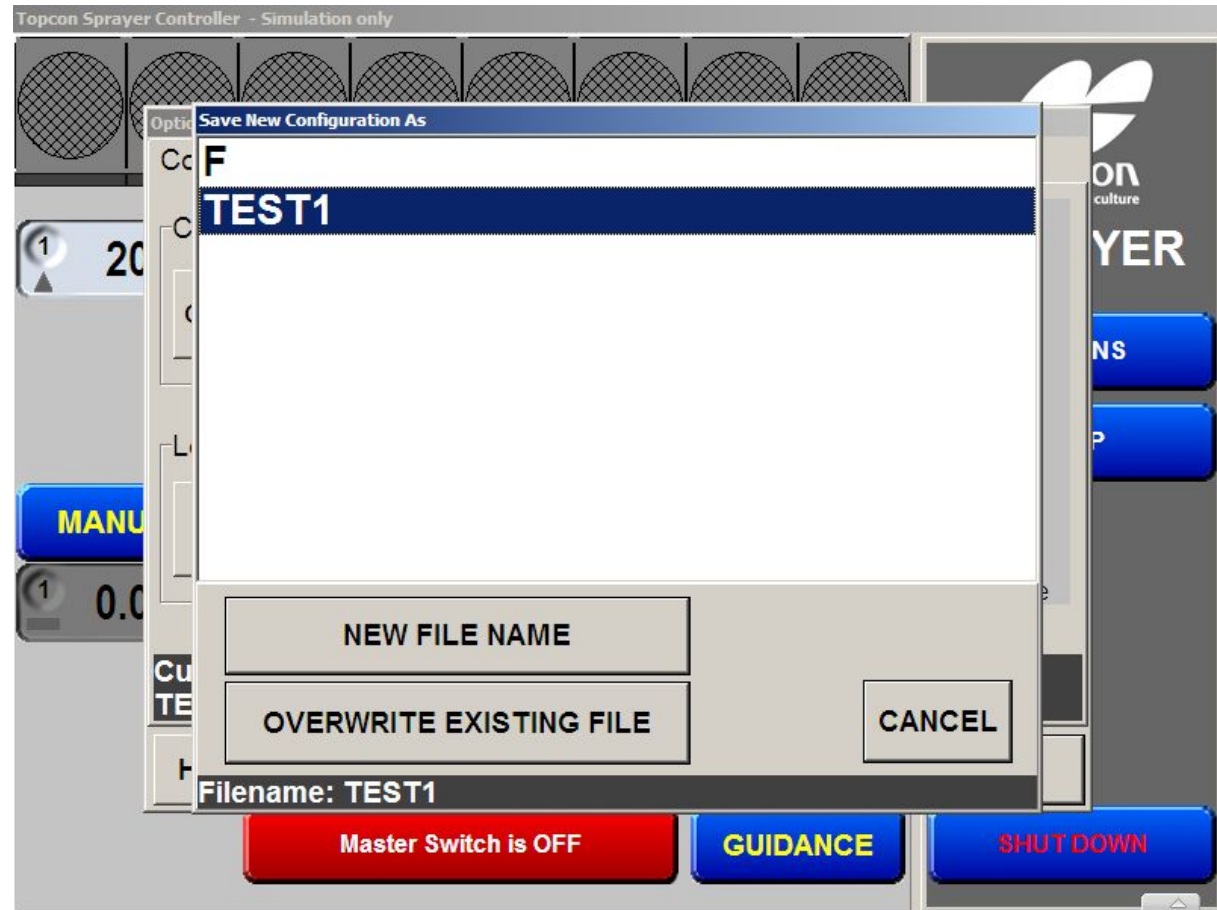


Sprayer Options

Saving The Configuration

Make sure after the setup of the sprayer to save the configuration under a new file name

Using a file name made up of the make & model of the unit along with the date could be helpful for future reference

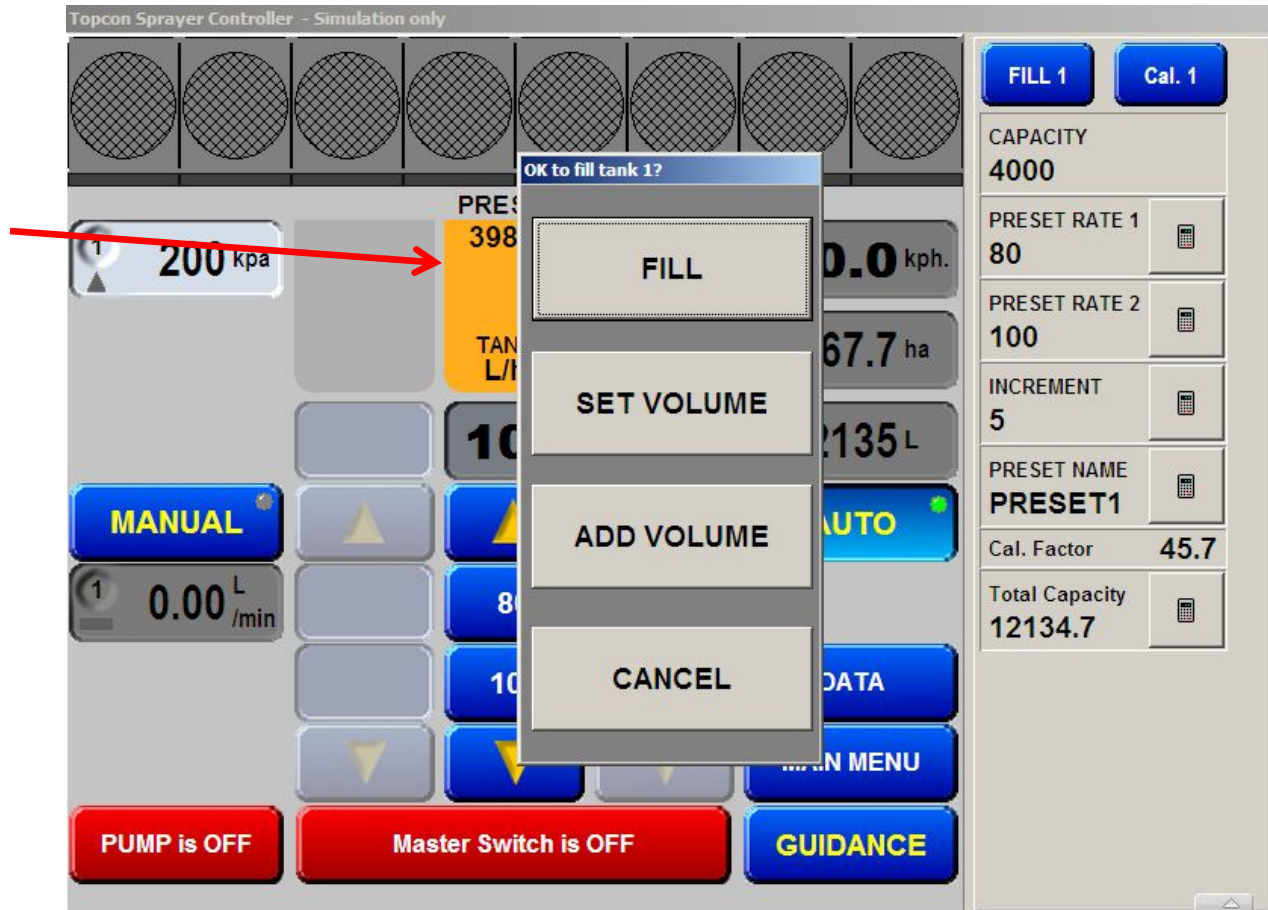


Tank Options

Tank Fill Options

With the master switch off, the tank menu can be selected by pressing the picture of the tank

Rates & Products can be set & fill options can be adjusted by selecting the Fill button

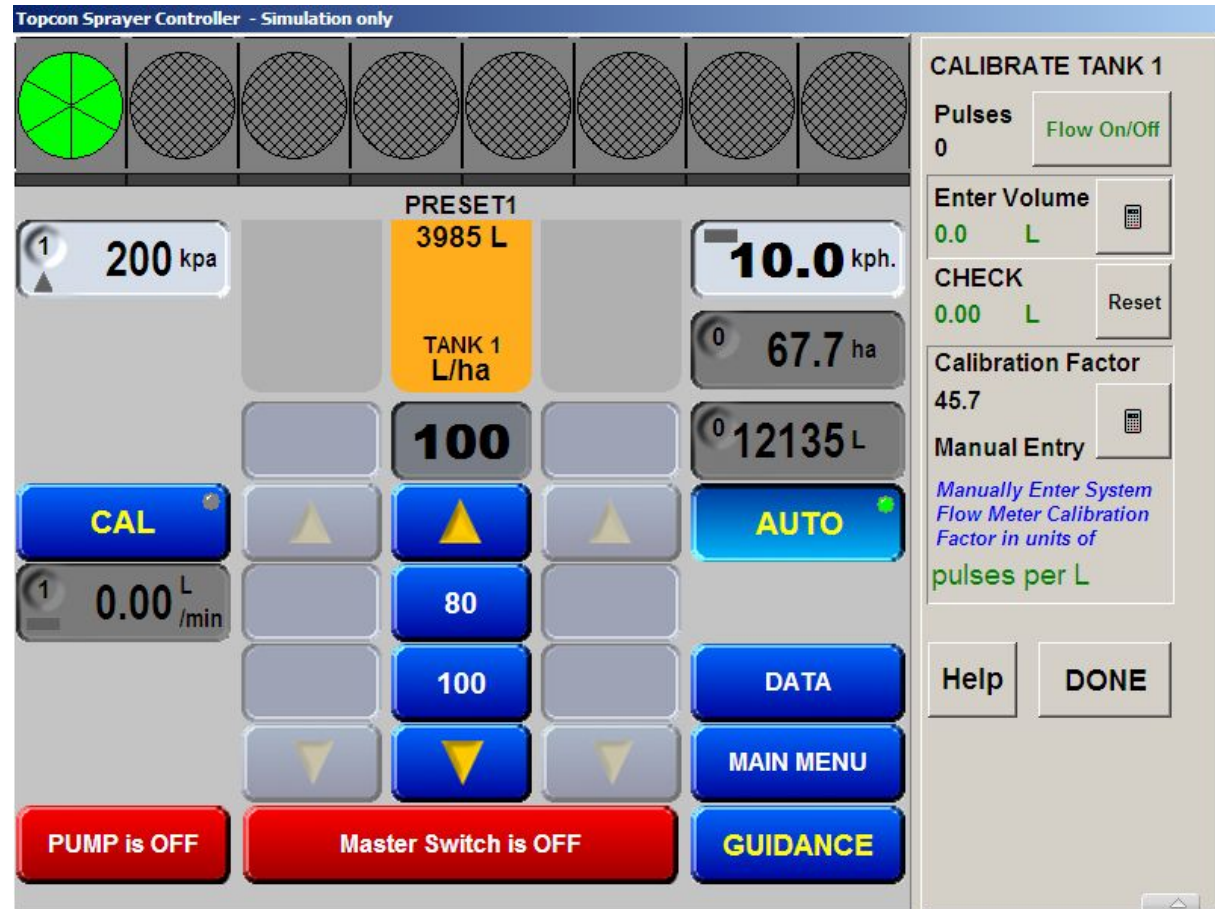


Flow Calibration

Calibration Method

Enable one section to perform a flow sensor calibration
 When the flow is started the volume will count up
 Enter the correct volume as measured and the calibration figure will adjust to match the require calibration factor

A manual entry can also be made if the calibration factor is known



The screenshot displays the 'Topcon Sprayer Controller - Simulation only' interface. At the top, there are eight circular icons representing different nozzle patterns, with the first one highlighted in green. The main control area includes several digital displays and buttons:

- Pressure:** 200 kpa
- Speed:** 10.0 kph
- Volume:** 0.00 L/min
- PRESET1:** 3985 L
- TANK 1:** L/ha
- Calibration Factor:** 45.7
- Flow Rate:** 67.7 ha
- Volume Counter:** 12135 L

Buttons include 'CAL', 'AUTO', 'DATA', 'MAIN MENU', 'GUIDANCE', 'PUMP is OFF', and 'Master Switch is OFF'. A right-hand panel titled 'CALIBRATE TANK 1' contains additional controls:

- Pulses:** 0, with a 'Flow On/Off' button.
- Enter Volume:** 0.0 L, with a calculator icon.
- CHECK:** 0.00 L, with a 'Reset' button.
- Manual Entry:** A section for manually entering the calibration factor, with a calculator icon and the instruction: 'Manually Enter System Flow Meter Calibration Factor in units of pulses per L'.
- Help** and **DONE** buttons.

Flow Display Options

Displays Volume per Minute or
Volume per Nozzle
Min & Max Nozzle Limits can be
set here

Menu is accessed by pressing
the Flow Display

The screenshot shows the 'Topcon Sprayer Controller - Simulation only' interface. At the top, there are eight circular nozzle icons. The main display area contains several data points and control buttons:

- Pressure: 200 kpa
- Flow Rate: 0.0 kph
- Area: 67.7 ha
- Volume: 12135 L
- PRESET1: 3985 L
- TANK 1: L/ha
- Flow Limit: 100
- MANUAL button
- AUTO button
- Flow Display: 0.00 L/min (highlighted with a red arrow)
- 80 and 100 buttons
- DATA button
- MAIN MENU button
- PUMP is OFF (red bar)
- Master Switch is OFF (red bar)
- GUIDANCE button

On the right side, the 'FLOW' menu is open, showing the following options:

- Nozzles: 32
- Display Volume/Minute
- Display Volume/Nozzle
- Minimum Flow Limiting
- Nozzle Limits:
 - Minimum: 1.5
 - Maximum: Not Used
- Flow Sensor 1 Limit: Not Used L/min
- Time Left Format: hh:mm
- Time Left 1: OFF
- Range 1: N/A

Pressure Options

Pressure alarms can be adjusted by pressing the pressure read out window

A sensor calibration can also be carried out depending on the type of sensor selected

The screenshot displays the 'Topcon Sprayer Controller - Simulation only' interface. At the top, there are eight circular icons representing different nozzle types. The main display area includes several readouts and control buttons:

- Pressure Readout:** A window showing '1 200 kpa' with a red arrow pointing to it from the text 'Pressure alarms can be adjusted by pressing the pressure read out window'.
- Flow Rate Readouts:** '0.0 kph.', '67.7 ha', and '12135 L'.
- PRESET1:** A yellow box showing '3985 L' and 'TANK 1 L/ha'.
- Control Buttons:** 'MANUAL', 'AUTO', 'DATA', 'MAIN MENU', 'GUIDANCE', 'PUMP is OFF', and 'Master Switch is OFF'.
- ALARMS:** A section on the right with 'High Press. 1 0' and 'Low Press. 1 0', each with a calculator icon.
- PRESSURE SENSOR:** A section with a 'CALIBRATE SENSOR' button.
- RESET FACTORY DEFAULT:** A button at the bottom right.

Speed Options

By pressing the speed window, wheel calibration factor and low speed shutoffs are shown

A manual speed can also be selected

The screenshot displays the 'Topcon Sprayer Controller - Simulation only' interface. At the top, there are eight circular icons representing different nozzle or wheel configurations. Below this, the main control area features several digital displays and buttons. A red arrow points from the text 'wheel calibration factor' to the '0.0 kph.' display. Other displays include '200 kpa', 'PRESET1 9985 L', 'TANK 1 L/ha', '100', '67.7 ha', '12135 L', and '0.00 L/noz'. A central keypad contains directional arrows and numerical buttons (80, 100). At the bottom, there are status indicators: 'PUMP is OFF', 'Master Switch is OFF', and 'GUIDANCE'. On the right side, a 'SPEED' panel shows 'Test Speed' controls (left and right arrows), 'Wheel Factor 0.5000 m', 'Spray Width 16 m', and 'Low Speed Shutoffs' (V1-V8: 2.0). Below this are 'VALVE INFO.' and 'Low Speed Hold Speed: 5' sections, each with a calculator icon.

Area Options

By pressing the Area window the area options are displayed

10 Sub areas & volumes are able to be recorded

The screenshot displays the 'Topcon Sprayer Controller - Simulation only' interface. At the top, there are eight circular icons representing sub-areas. The main control area includes a pressure gauge showing 200 kpa, a speed gauge showing 0.0 kph, and a volume gauge showing 12135 L. A central display shows 'PRESET1 3985 L' and 'TANK 1 L/ha'. Below this are several buttons: 'MANUAL', 'AUTO', 'DATA', 'MAIN MENU', 'GUIDANCE', and two red status bars indicating 'PUMP is OFF' and 'Master Switch is OFF'. A numeric keypad is also present. On the right side, the 'AREA' window is open, showing 'Total 67.7' and 'SUB AREA/VOLUME' options. A red arrow points from the text 'the area options are displayed' to the 'AREA' window.

AREA	
Total 67.7	Reset
SUB AREA/VOLUME	
Area Number: 0	Reset
Area 67.7	Reset
L 12134.7	Reset
TANK 1	
Reset Area Number	
TIME	
Spraying time 4:48	Reset

Data Display

By pressing the Data window all configuration & current sensor values are displayed

The screenshot displays the 'Topcon Sprayer Controller - Simulation only' interface. At the top, there are eight green circular indicators representing nozzles. Below them, the main control area features several digital displays and buttons. A red arrow points from the text on the left to the 'DATA' button in the bottom right of the control panel.

Topcon Sprayer Controller - Simulation only

DATA

- Speed : 18
- Area / Hour : 28.8
- SprayingTime : 0:01
- Wheel Factor : 0.5
- Working Width : 16
- Max. Width : 16
- Spraying Nozzles : 32
- Total Nozzles : 32
- Press. Preload : 0
- LO Press. Alarm 1 : 0
- HI Press. Alarm 1 : 0

Rate: 100

Pressure: 200.0

Preset: PRE

Capacity: 4000

Flow Cal: 45.7

Switch Box: Disconnected
Disconnected

MANUAL **200 kpa** **PRESET1** **3754 L** **18.0 kph.**

TANK 1 **L/ha** **0.8 ha**

100 **88.4 L**

MANUAL **48.6 L/min** **80** **100** **AUTO** **DATA**

PUMP is ON **Master Switch is ON** **MAIN MENU** **GUIDANCE**

Are You Stuck?



Any Questions?



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