

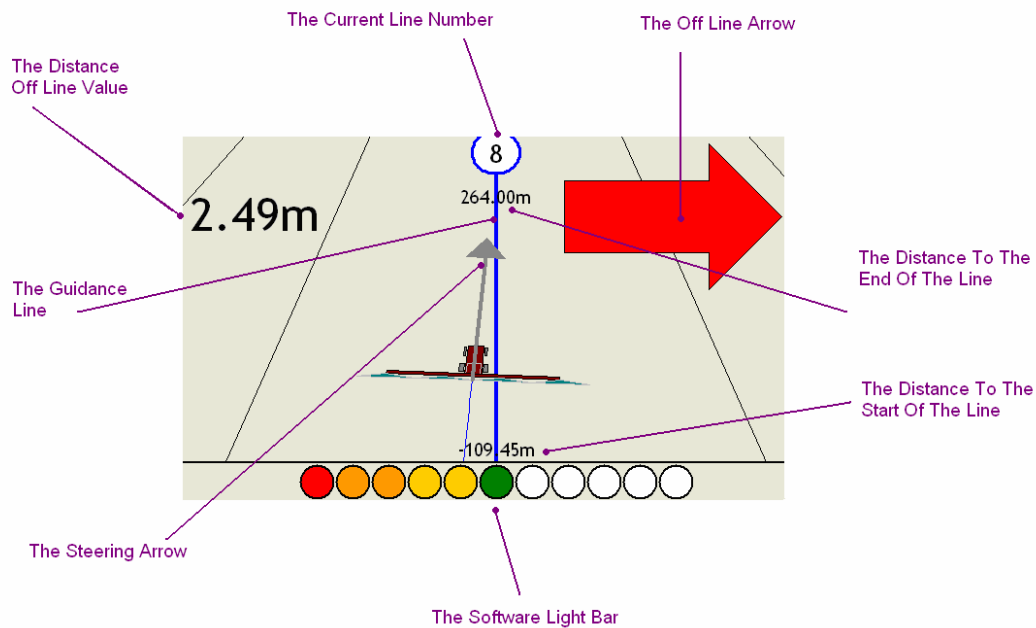


Guidance Only
Operators Manual

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The Guidance View



The **Guidance Line** in the centre of the screen indicates the path that the vehicle should follow.

The **Steering Arrow** shows the path that will be taken by the vehicle if the steering remains unchanged. The thin blue line behind the **Steering Arrow** shows the path the vehicle has already taken.

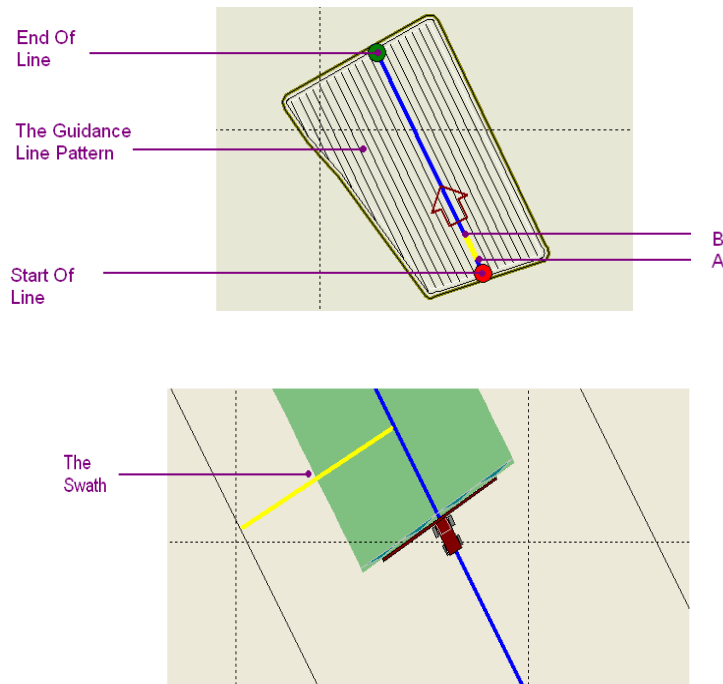
Any deviation from the planned route is highlighted by the **Off Line Arrow**. This arrow increases in size and turns from orange to red as the separation between the **Guidance Line** and the vehicle increases. The direction the arrow is pointing in indicates the direction in which to steer. The **Distance Off Line Value** shows this distance.

The **Software Light Bar** also shows the distance off line. The further the vehicle is off line the more lights are shown. Exactly when these lights come on can be configured. When the vehicle is on course a single green light is shown.

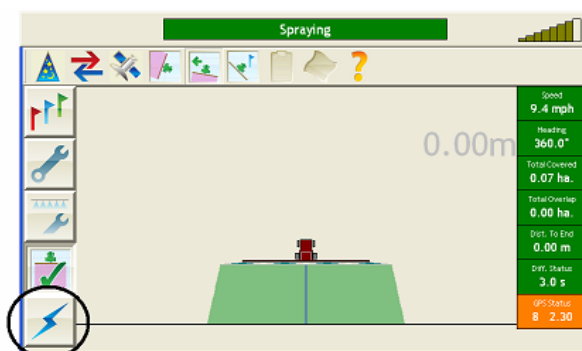
Information is provided along the **Guidance Line**. The **Current Line Number** is shown at the top of the screen along with the **Distance to the End of the Line**. At the bottom of the screen the **Distance to the Start of the Line** is shown. This number is shown as a negative number as the vehicle has passed the start of the line.


Setting an A to B Line

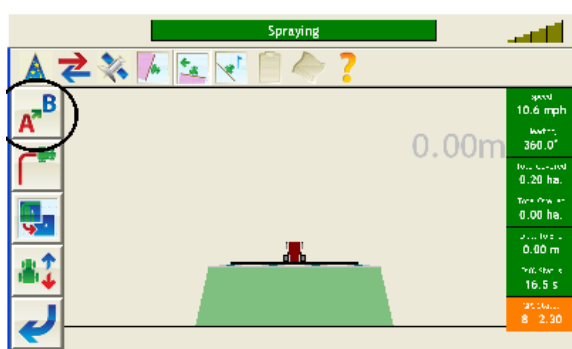
All **Guidance Line Patterns** are set up so that all guidance lines are separated by the **Swath**. These patterns are set up by extending a straight (or curved line) between two points termed **A** and **B**, hence the name **A to B Line**.



To create an **A to B Line** from the **Guidance View**, follow the steps below.

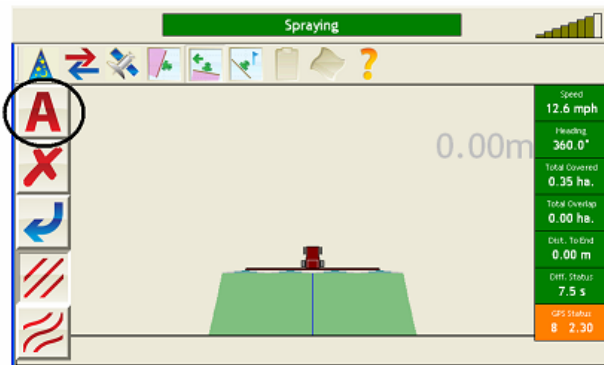



To set the **A to B Line**, press the **Lightning Bolt Button** .



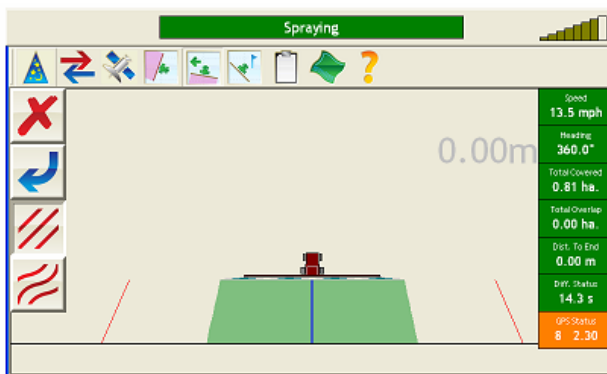
Then select the **A to B Button** .

This puts the software into A to B mode.

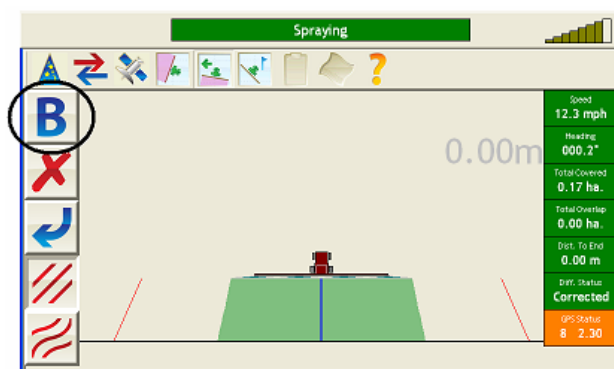



The **A Button**  is now available from the top level of the menu.

Drive along the first line and press the **A Button** to start recording the **A to B Line**.

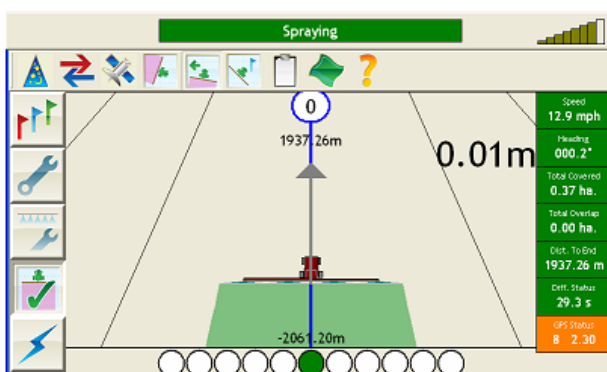


The vehicle has to travel a minimum distance before the next button appears on the screen.



When the vehicle has travelled the minimum distance required the **B Button**  will appear at the top level of the menu.

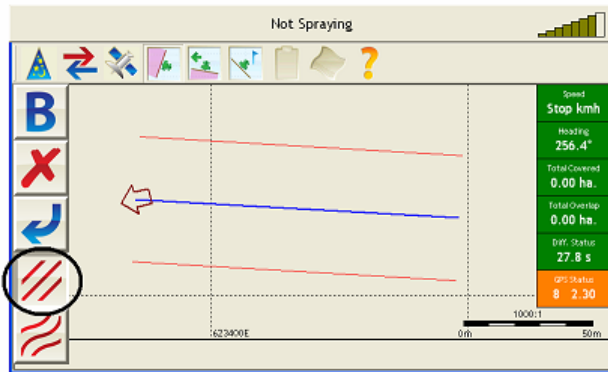
Press the **B Button** to set the **A to B Line**.




The **A to B Line** is then displayed on the screen.

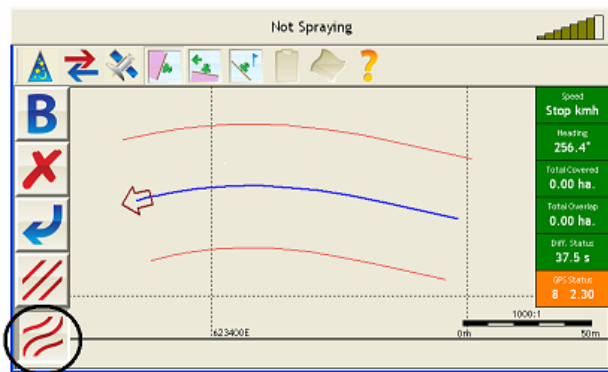
The same operations can be performed from the **Plan View** too.


The choice of a curved or straight line pattern can be changed anytime before pressing the **B Button**.

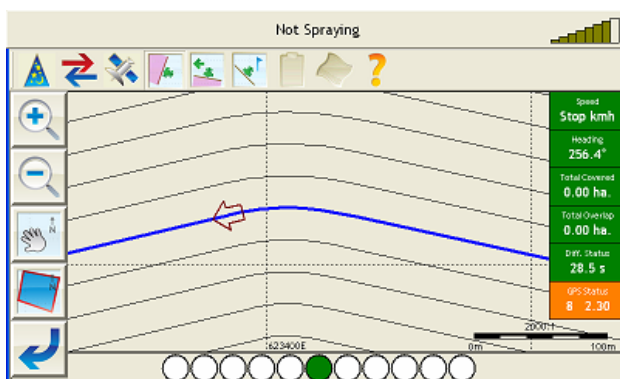


To create a straight line pattern make sure the **Straight Line Button**  is depressed before selecting the **B Button**.

Field Master will then create a straight line from Point A to Point B.

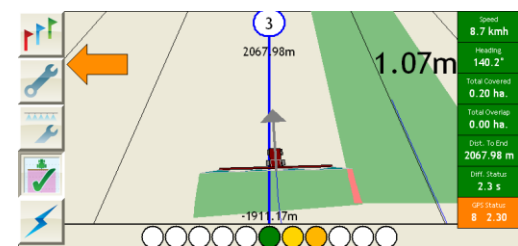
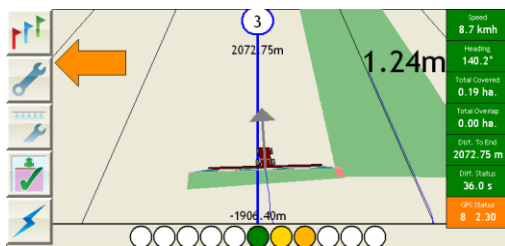
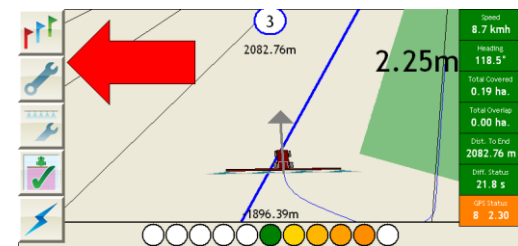
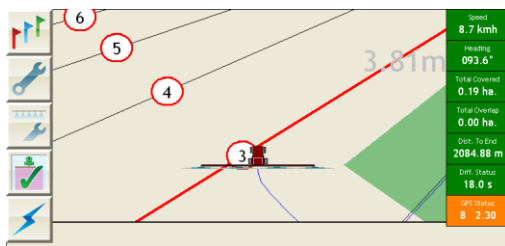
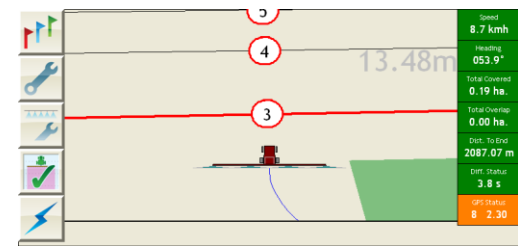
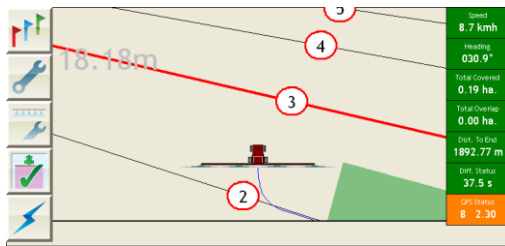
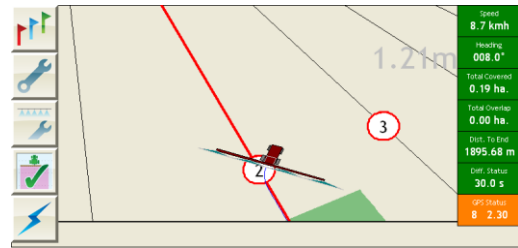
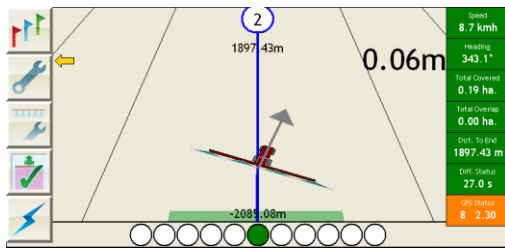
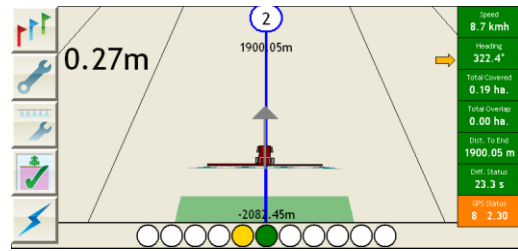
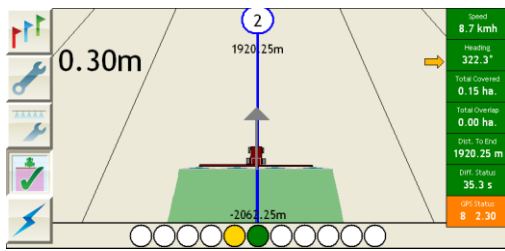


To create a curved line pattern where all or part of the **Guidance Line** is curved press the **Curved Line Button**  before selecting the **B Button**. Field Master will then create a line based on the path recorded by the vehicle from Point A to Point B.



Straight lines are used to extend the line beyond the A and B Points.


Changing Lines

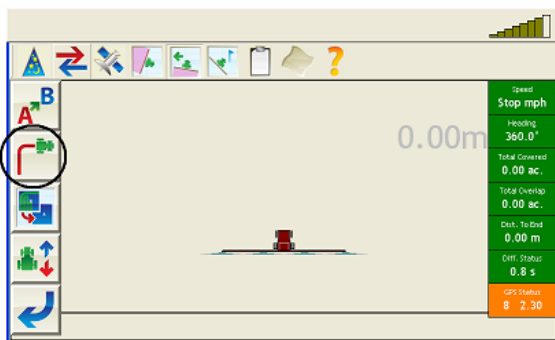


Creating A Field Boundary

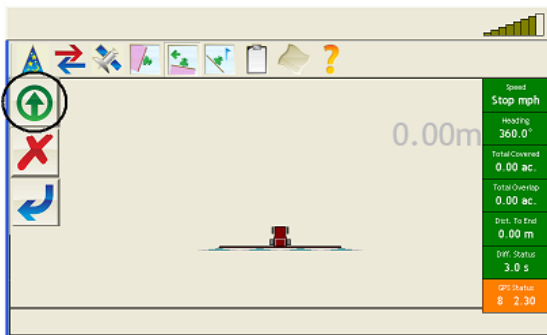
To create a **Field Boundary** from the **Guidance View** follow the steps below.




To set the **Field Boundary**, press the **Lightning Bolt Button** .



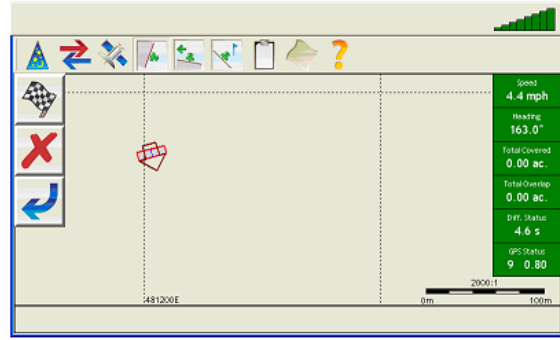
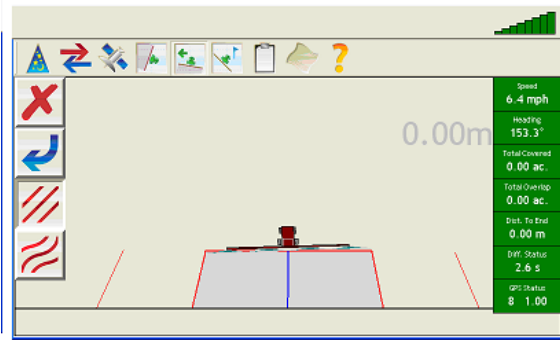
Then select the **Field Boundary Button** .



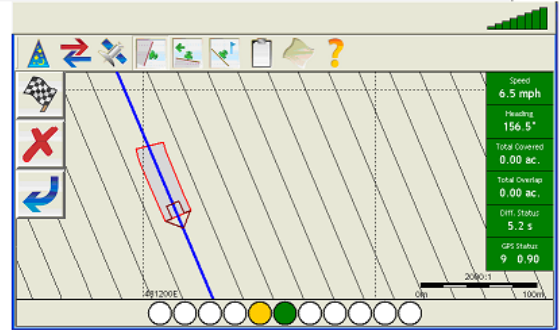
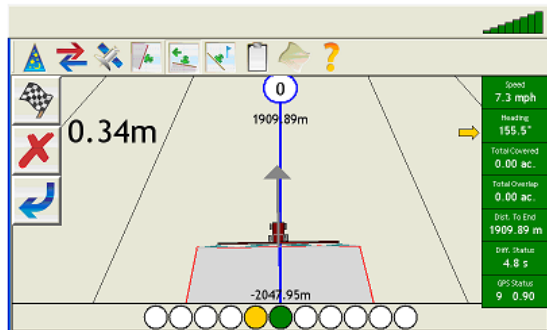
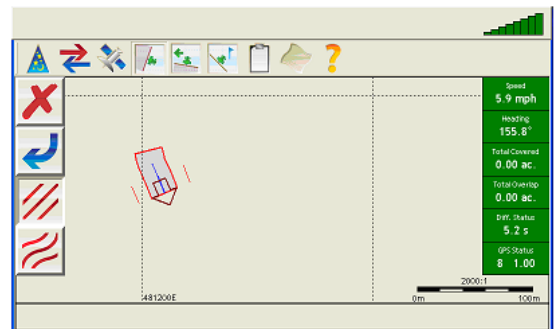
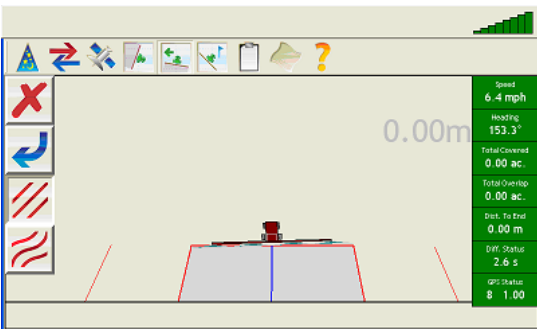
The **Draw Boundary Button**  is now available from the top level of the menu.

Press this button to start recording the **Field Boundary**.

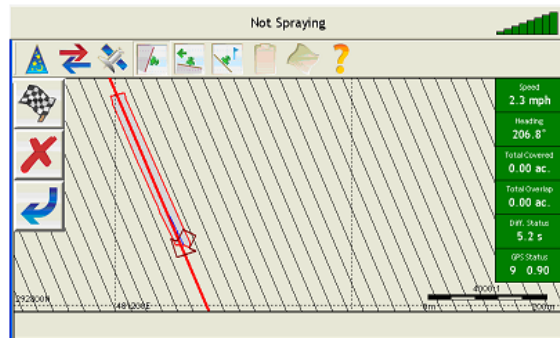
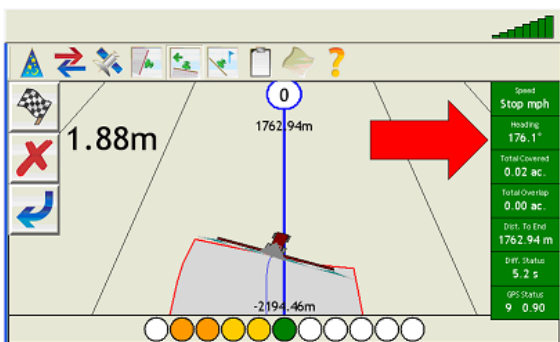
The progress of the vehicle along the boundary can be seen in both the **Guidance View** and the **Plan View** as shown below. It is shown as a grey box with a red outline.



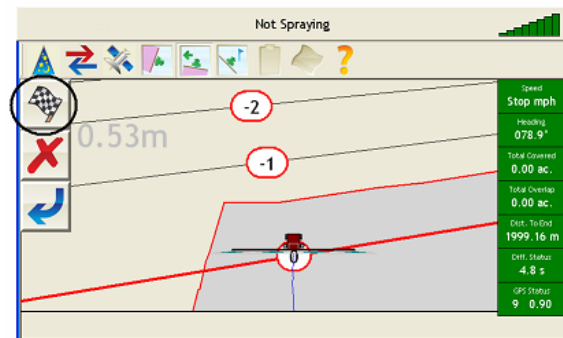
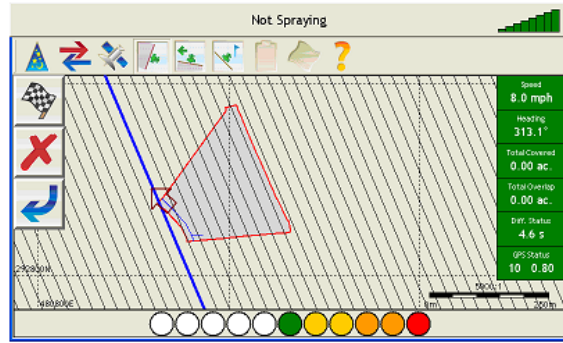
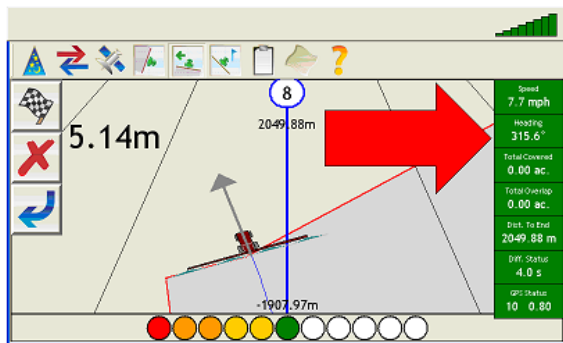
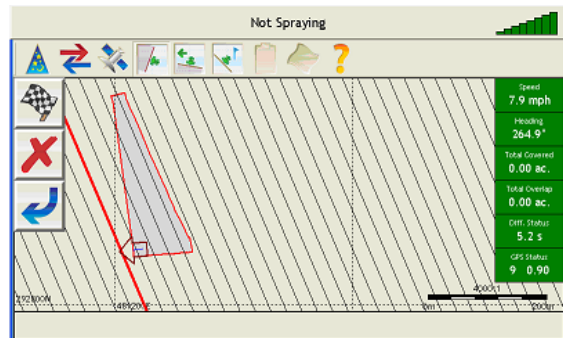
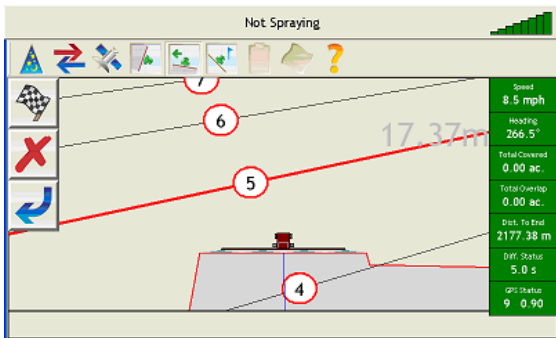
The A to B Line can be set at any time. This includes whilst drawing the boundary.



The Zoom In and Zoom Out buttons available in the Plan View alter the scale of the image on the screen. By depressing the Zoom Out button, the scale can be enlarged so that all of a boundary or field can be seen.



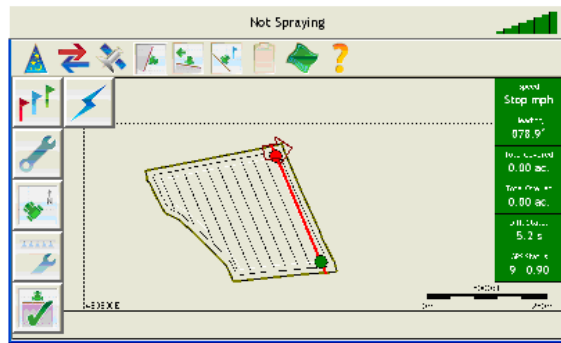
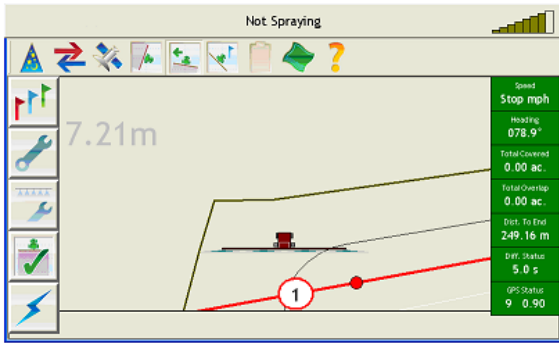
Once part of the boundary is recorded, Field Master predicts the shape of the field and adjusts this prediction as the recording continues.



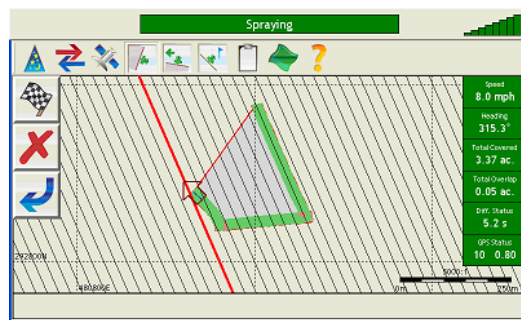
Once Field Master has recorded all of the boundary, depress the **Finishing Flag** button




The **Field Boundary** is now set.






Spraying can also be performed at the same time as creating a **Field Boundary**. For clarity, this is not shown in the examples above but can be seen in the example below.

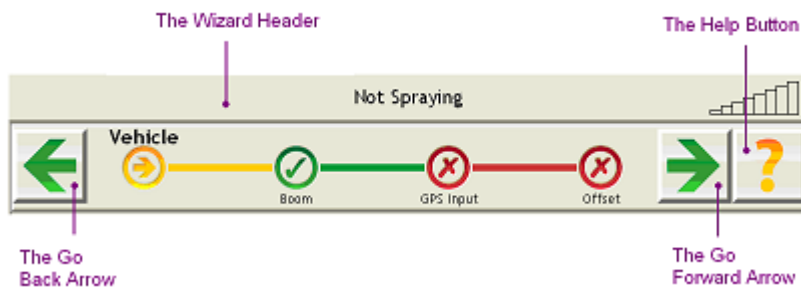



Field Master Setup

To set up Field Master with your configurations, depress the **Setup Button**  on the **Main Menu**. The first of four **Setup Screens** will then be displayed.

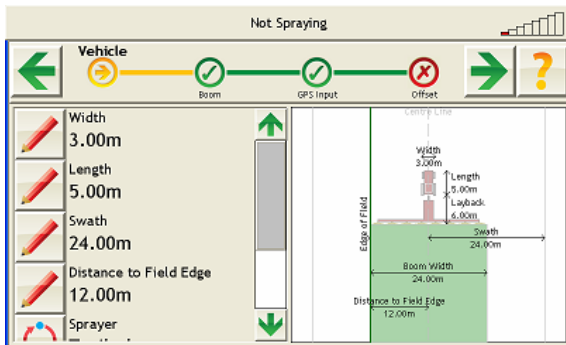


The **Wizard Header** is displayed at the top of each screen and shows the order in which the screens appear. The current screen is shown as a yellow arrow , screens with data already input are shown as green ticks  and screens that are to be completed are shown as red crosses .



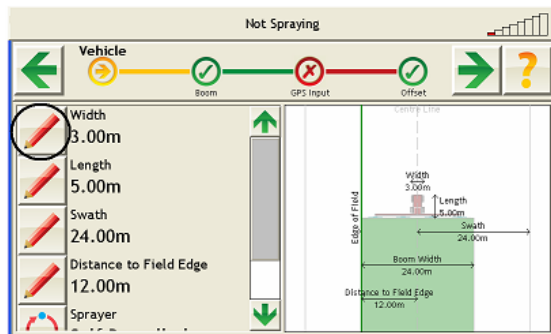
To navigate from screen to screen, depress the **Go Forward Arrow**. To return to a previous screen, depress the **Go Back Arrow**. To access help specific to this screen, depress the **Help Button** .

The Vehicle Setup Screen



The left side of the screen contains information about the width and length of the vehicle, the swath, the distance to the field edge, the sprayer, the layback and the colour of the software vehicle. The same information is displayed graphically on the right side of the screen.

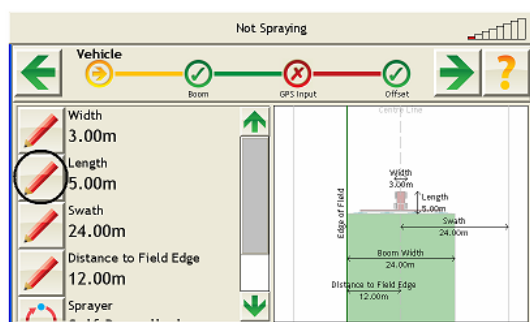
Information about the **Boom Width** is entered and amended via the **Boom Setup Screen**.



Width

To amend the width of the vehicle, depress the first **Pencil Button** . The width can then be input using the **Distance Editor**.

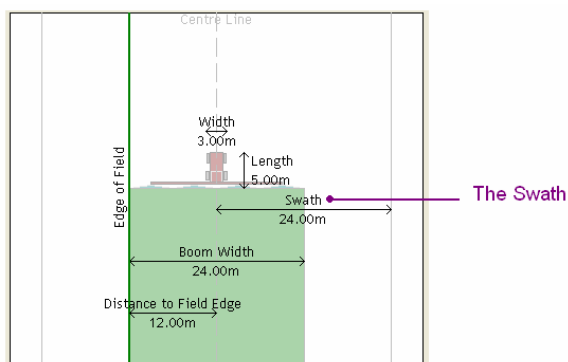
The width of the vehicle is not used in any position calculations however it is necessary for the graphical displays.



Length

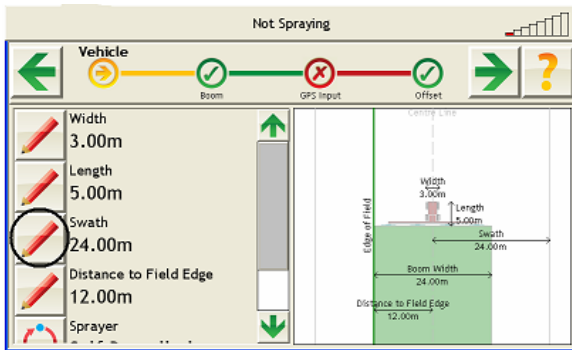
To amend the length of the vehicle, depress the second **Pencil Button** . The length can then be input using the **Distance Editor**.

The length of the vehicle is not used in any position calculations however it is necessary for the graphical displays.

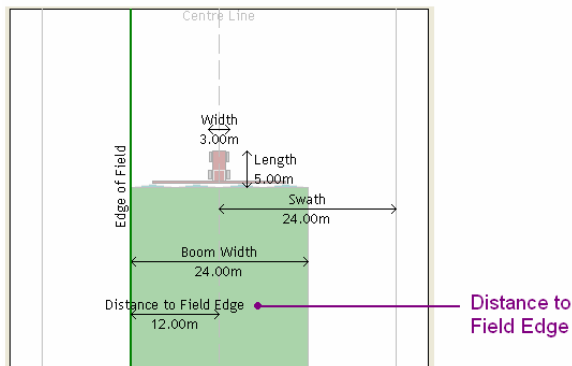


Swath

The **Swath** is the distance between the lines in the **Guidance Line Pattern**. Typically, this is the same as the **Boom Width** but could be set smaller than the **Boom Width** to ensure complete coverage.



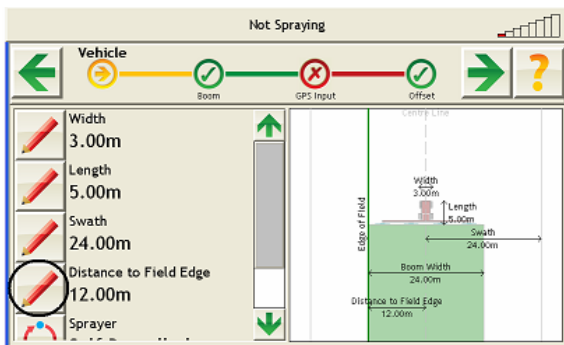
To amend the **Swath**, depress the third **Pencil Button** . The **Swath** can then be input using the **Distance Editor**.



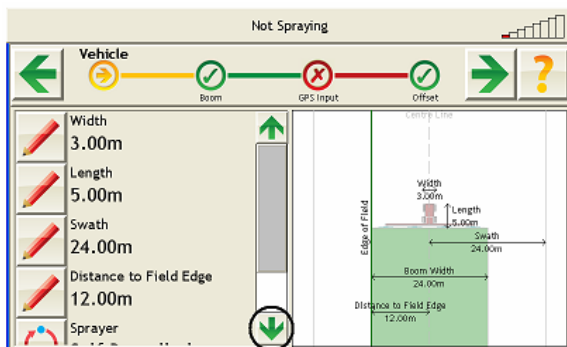
Distance to Field Edge

The **Distance to Field Edge** is the distance between the centre line of the vehicle and the edge of the field when calculating a **Field Boundary**. It is the same for left and right sides.

This measurement is only used for **Creating a Field Boundary**.



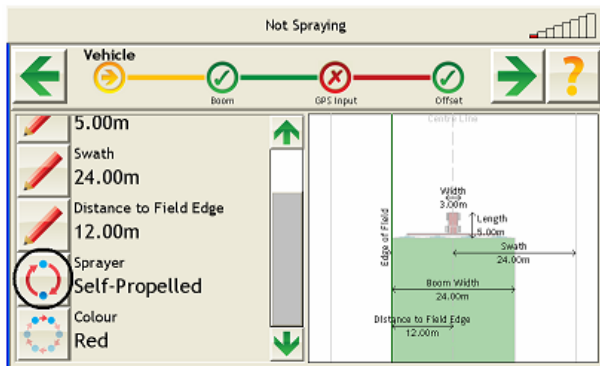
To amend the **Distance to Field Edge**, depress the fourth **Pencil Button** . The **Distance to Field Edge** can then be input using the **Distance Editor**.



To view the **Sprayer** and **Colour Toggle Buttons** , scroll down the **Vehicle Setup Screen** using the **Arrow Button** .

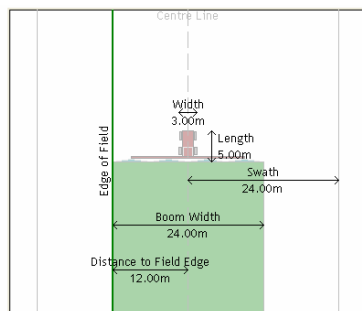
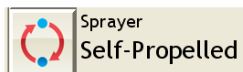
Sprayer

Spraying can be performed using a range of spraying equipment. The three most common sprayers are 'self-propelled', 'trailed', and 'mounted'. A self-propelled sprayer is a vehicle designed for spraying so the sprayer is a permanent part of the vehicle and therefore rigidly attached. A trailed sprayer is a sprayer that is attached to a vehicle via a tow bar and therefore trails the vehicle towing it. A mounted sprayer is a sprayer that is rigidly attached to a separate vehicle and therefore becomes part of that vehicle whilst attached. A mounted sprayer should be regarded as a single unit and so is set up as a 'self-propelled' sprayer.

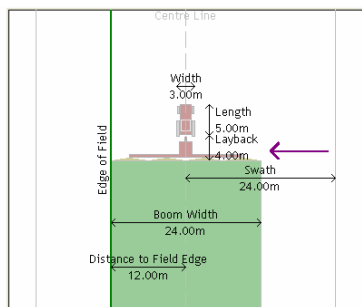
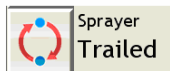


To amend the **Sprayer** setting, depress the first **Toggle Button**

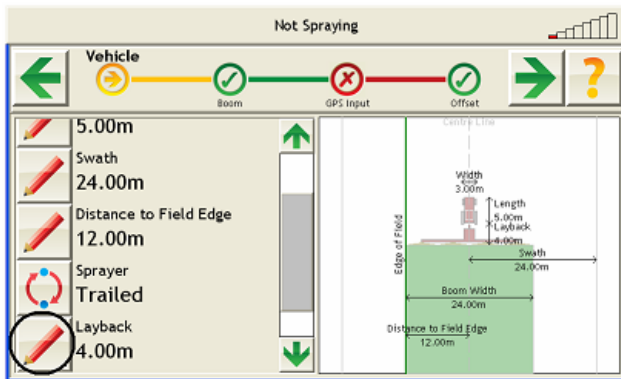
There are two spraying settings so by depressing the **Toggle Button** a choice can be made between **Self-Propelled Spraying** and **Trailed Spraying**.





If the sprayer is 'self-propelled' or 'mounted', select **Self-Propelled Spraying**. This informs the software that the sprayer being used is rigidly attached to the vehicle. The graphics on the right side of the screen will only show the vehicle's width and length as the length of the vehicle includes the spraying unit.

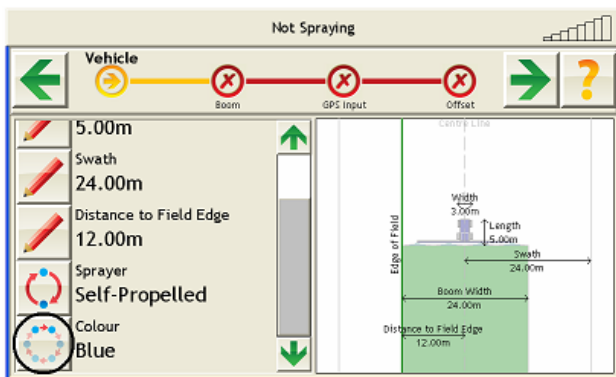


If the sprayer is a 'trailing' sprayer, select **Trailed Spraying**. This informs the software that the spraying unit is trailing the vehicle. The graphics on the right side of the screen will show the vehicle's width and length as well as the length of **Layback**. The **Layback** is the distance between the tow bar on the vehicle and the point of spraying.





When **Trailed Spraying** is selected, a fifth **Pencil Button**  appears on the **Vehicle Setup Screen**.

To amend the **Layback**, depress this **Pencil Button** . The **Layback** can then be input using the **Distance Editor**.

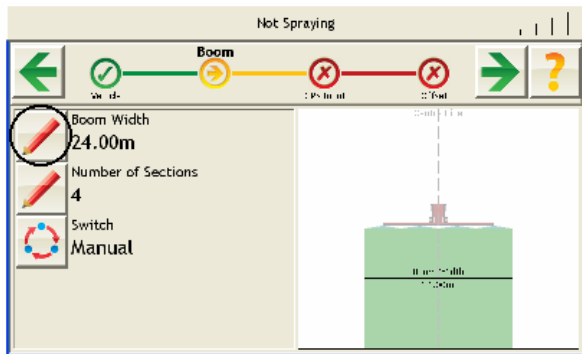



Colour

To amend the **Colour** setting, depress the second **Toggle Button** .

There are five **Colour** settings so by depressing the **Toggle Button** , a choice can be made from red, green, blue, yellow or grey according to preference.

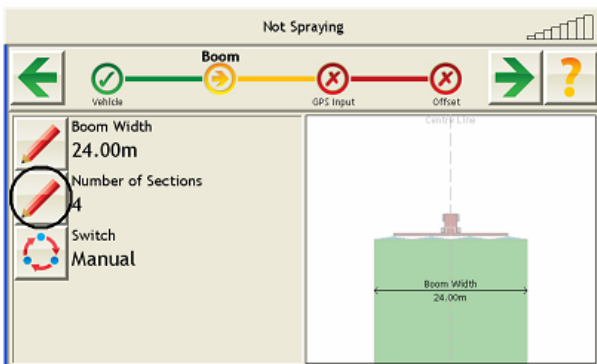
The Boom Setup Screen




To set the **Boom Width**, depress the top **Pencil Button** .

The **Boom Width** is the actual sprayed width as shown on the diagram. Typically, this is the same as the **Swath**.

(See the [Vehicle Setup Screen](#).)

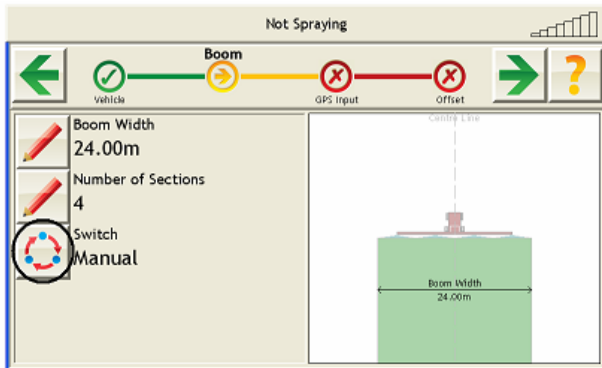



To change the number of **Boom Sections**, depress the lower **Pencil Button** .

This value is only used for graphical display, as shown in the diagram on the right side of the screen.

If your Field Master software has **Boom Control**, the sections can be individually controlled automatically.

Spraying Control



By pressing the **Toggle Switch** , a range of spraying control options become available.



Switch
Manual

- The Manual Option

By selecting this option, the **Spraying Button** appears on the **Guidance View** and **Plan View** screens and must be depressed manually to commence spraying. If any other option is selected, the **Spraying Button** does not appear and spraying is controlled by the DSR (Data Set Ready) Line on the selected serial input.



Switch
GPS

- The GPS Option

By selecting this option, spraying is controlled by the same serial port that the **GPS** (Global Positioning System) comes in on.

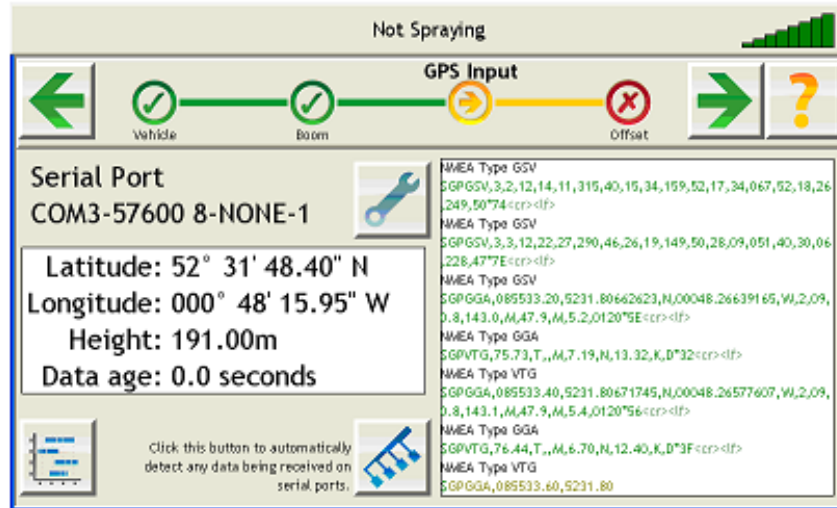


Switch
COM3

- The COMX Option

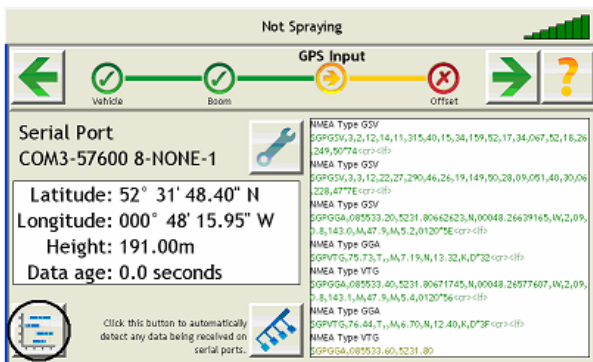
By selecting this option, spraying is controlled by the serial port with the same name. In this example, spraying is controlled by the COM3 serial port.


The GPS Input Screen



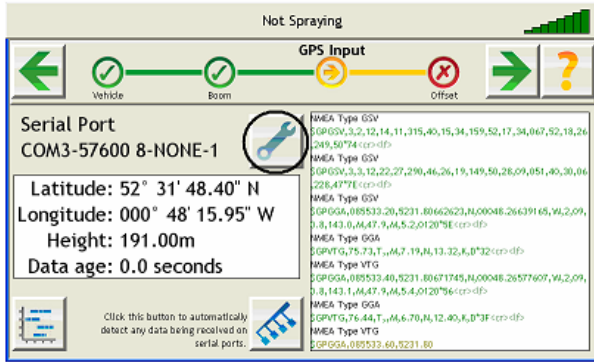
For [GPS](#) to work successfully, Field Master must receive NMEA data strings containing information about the latitude, longitude and speed of the vehicle.


On the right side of the screen, raw data received from the serial port are displayed. If the data strings are red or are slow to update then the port settings are probably incorrect, however interference may have occurred or the data could be corrupt. While waiting for a complete string to be received, the message appears in yellow. Once a message has been successfully decoded, it is displayed in green and a black message line is displayed such as 'NMEA Type GGA'. Field Master requires GGA (position) and VTG (speed) messages five times a second.



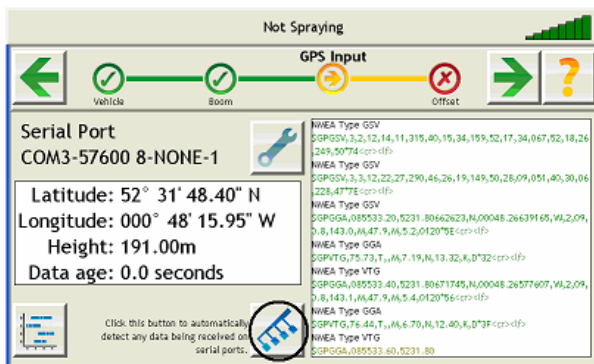
To view information about the constellation of satellites providing the [GPS](#) data, depress the [Graph Button](#) .


The [Satellite Information Screen](#) will then be displayed.



To amend the serial port settings manually, depress the **Setup Button** .

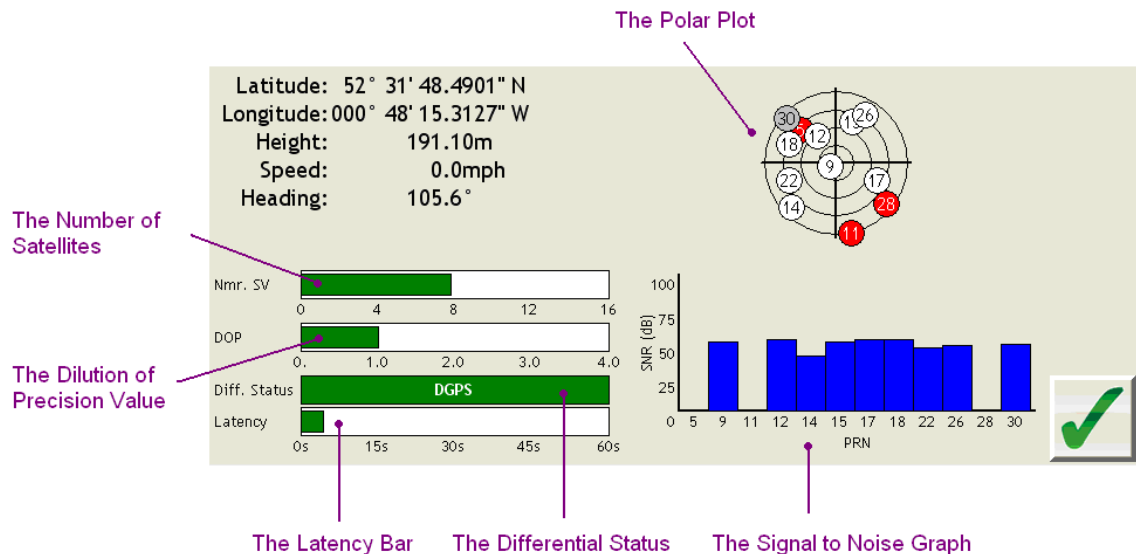
The **Serial Port Settings Screen** will then be displayed.



To begin an automatic search to find a port which is receiving **GPS** data, depress the **Serial Connector Button** .

The **Automatic Serial Port Screen** will then be displayed.

The Satellite Information Screen



The **Polar Plot** shows which satellites are visible and where they are positioned in relation to the vehicle's location.

The **Signal to Noise Graph** shows the strength of each satellite signal against background noise. The higher the graph bar, the stronger the signal.

The **Differential Status** shows whether the **GPS** positions have been corrected and are therefore more accurate. If the bar is green and shows 'DGPS', then corrections are being employed within the position calculation.

The **Latency Bar** shows the age of the corrections employed within the position calculation. Anything less than 45 seconds is considered good.

The **Dilution of Precision Value (DOP)** shows the geometric accuracy of **GPS**. The stronger the geometry, the lower the **DOP**. A **DOP** below 2 is considered good.

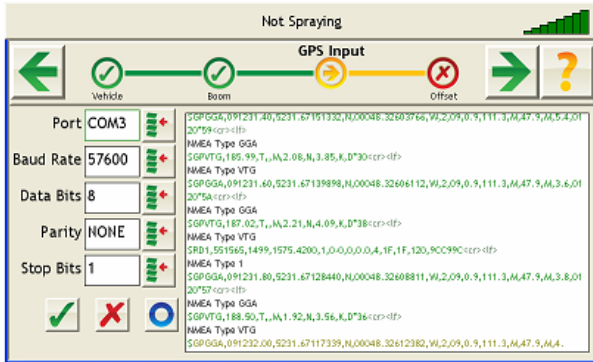
The **Number of Satellites** shows the number of satellites visible from the vehicle. A constellation of six or more satellites is considered good.

If the GSV NMEA messages are not received these graphs will not be shown.

For more information, please refer to [Global Positioning System](#).

To return to the [GPS Input Screen](#), depress the **Tick Button** .

The Serial Port Settings Screen



The raw data shown on the right side of the screen are the same data shown on the [GPS Input Screen](#).

On the left side of the screen there are five **Selection Buttons** which provide a choice of settings when depressed.

Port - Depress this button to select the serial port through which GPS data will be received.

The following four values must be set to match the incoming GPS data.

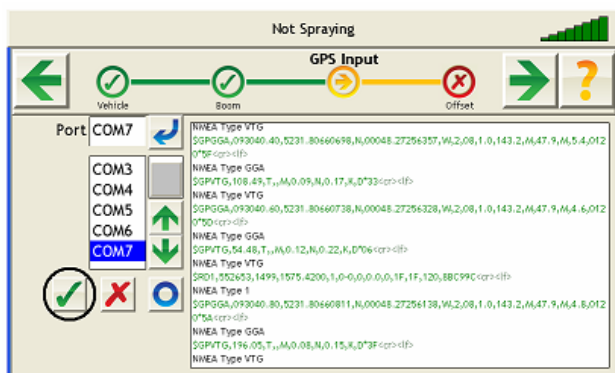
Baud Rate - This is the speed of transmission. It needs to be fast enough to allow all NMEA messages to be transmitted for every position. Typically, a value of 57600 will be used.

The following three values are termed the 'data format'. It is very unusual for a receiver to send anything other than 8-NONE-1, although 7-ODD-1 is occasionally employed.

Data Bits - The number of bits per byte (usually 8).

Parity - The mode used for checking data (usually NONE).

Stop Bits - The number of stop bits (usually 1).

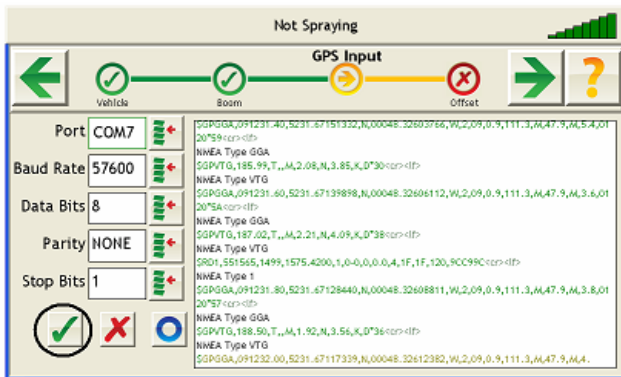


Once a **Selection Button** is depressed, a screen appears with options to select from.

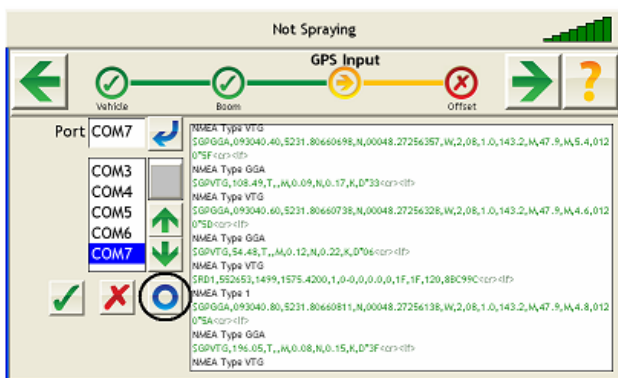
In this example, the 'Port' **Selection Button** has been depressed so a range of different ports have become available to choose from.

To confirm the amended settings, depress the **Tick Button** at the bottom of the screen.

To leave the displayed screen without altering current settings, depress the **Cross Button**

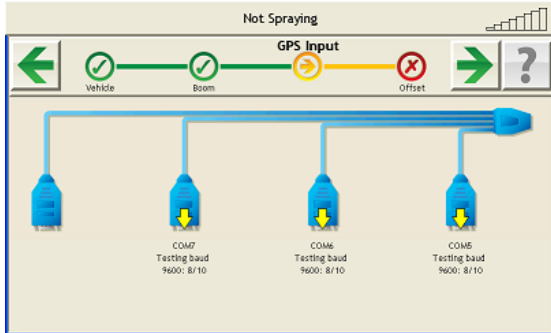


To check that the new settings are successful for receiving data, return to the **GPS Input Screen** by depressing the **Tick Button**



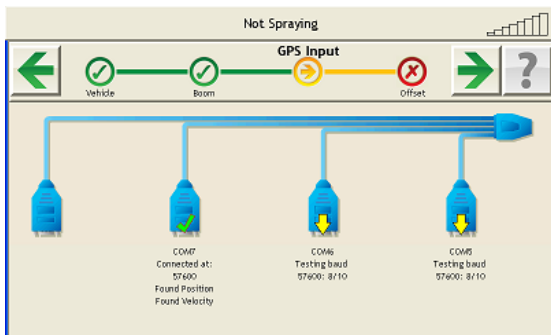
Alternatively, a more time efficient way of checking the new settings is to depress the **Blue Circle** before leaving the current screen. By doing so, the amendments are updated and their effect can be seen immediately in the data being received. If different settings are then required, these can be selected and amended without moving from screen to screen.

The Automatic Serial Port Screen



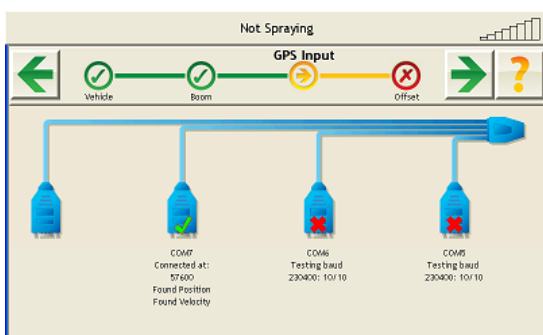
On accessing this screen, Field Master automatically begins a search to find the port which is receiving **GPS** data. The ports being searched are highlighted with yellow arrows.

'8-NONE-1' is assumed as the data format for all of the inputs. Field Master then cycles through a sequence of **Baud Rates** waiting for approximately 10 seconds at each to try to identify the required data.



When a port successfully receives **GPS** data, a green tick appears on that port.

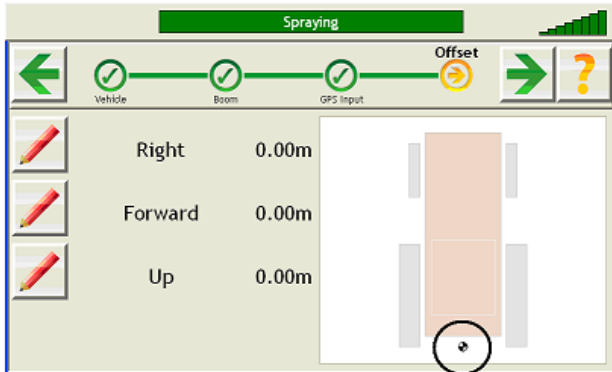
By tapping this green tick once, the **GPS Input Screen** reappears with the **GPS** data.



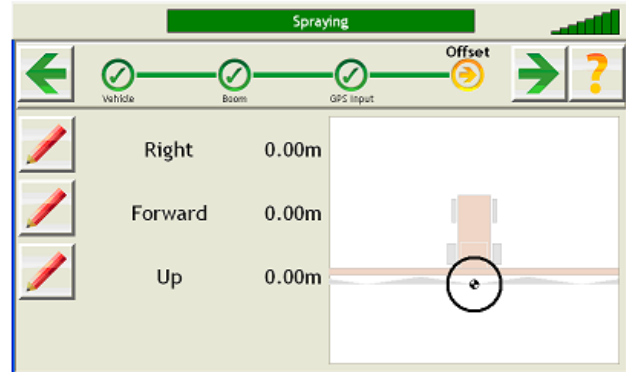
Alternatively, wait for the other ports to finish their search. Once all the other ports are displaying red crosses, the **GPS Input Screen** automatically reappears.

If two ports show a green tick and are therefore successfully receiving **GPS** data, select one of them by tapping its green tick once.


The Offset Screen

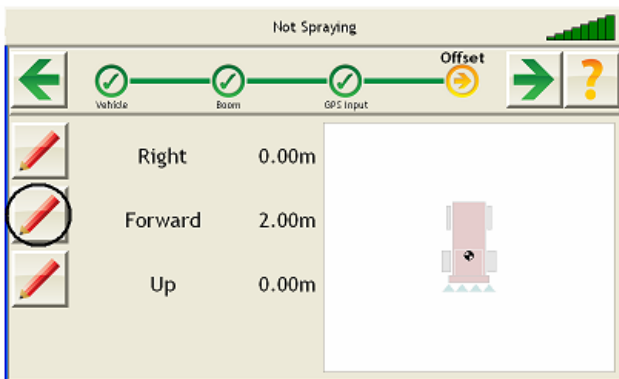




This example shows a vehicle with a 'Trailed Sprayer'.



This example shows a vehicle with a 'Self-Propelled Sprayer'.

By default, the **GPS** antenna  is shown as being placed at the centre of the rear of the vehicle. If this is not the case for the antenna on your vehicle, then the information held on this screen will need to be amended.



To amend the antenna's position, depress the appropriate **Pencil Button** . For example to move the antenna forward, depress the second **Pencil Button** .

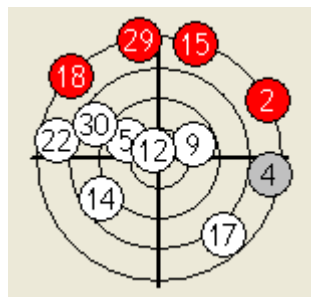
The antenna's position can then be input using the **Distance Editor**.

Ideally, the antenna should be placed on the centre line of the vehicle.

Global Positioning System

The **Global Positioning System** (GPS) was developed by the United States Department of Defense and is managed by the United States Air Force 50th Space Wing. The system consists of up to thirty two satellites which orbit the Earth approximately every twelve hours at a height of 20,200km travelling at a speed of 4km per second. Typically, a satellite can be seen for approximately four hours.

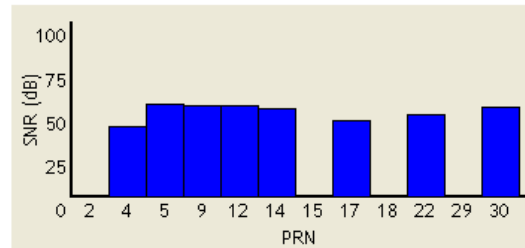
A set of satellites is known as a constellation. From any position and at any one time, a constellation of between six and twelve satellites is visible. A **Polar Plot** is often used to show the position of these satellites. An example is shown below.



The four points of the black cross mark out North, East, South and West on the horizon. The centre of the cross is directly overhead. The numbered circles show where the visible satellites are positioned. Each satellite is identified by its **PRN (Pseudo Random Number)**. In this example, PRN 17 has an elevation of about 20 degrees above the horizon in the South East.

The **DOP (Dilution of Precision)** value represents the geometric accuracy of GPS. When visible satellites are close together or in a line in the sky, the geometry is weak and so the **DOP** is high. When the satellites are well spread the geometry is good and so the **DOP** is low. A **DOP** below 2 is considered good. In theory, low elevation satellites improve positioning. However in practice, their signals travel through more of the atmosphere and are therefore less reliable. Therefore, satellites below an elevation mask (typically 10 degrees) are not employed in the position calculation.

At least four satellites are needed to calculate a position. The more satellites that are visible, the better the positioning is. GPS is a ‘line of sight’ system which means the signal from a satellite can be lost if shielded by objects such as buildings or trees.



Measurement quality is given in terms of the **SNR (Signal to Noise Ratio)** and is measured in decibels (dB). The higher the value, the better. Once **SNR** is below a certain value the measurement is lost altogether. Loss of the measurement results in a higher **DOP** and therefore worse positioning.

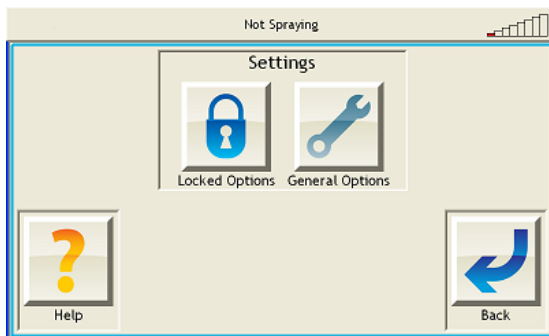
To ensure satellite positioning is as accurate as possible, organisations such as the European Geostationary Navigation Overlay Service (**EGNOS**) provide correction services. Errors are measured at known points to work out how to correct GPS at a specific time and region. A corrected GPS, known as a **Differential GPS** or **DGPS**, provides an improvement in position. It is important that the age of the corrections, **latency**, isn't too old. Anything less than 45 seconds is good.

Field Master Settings



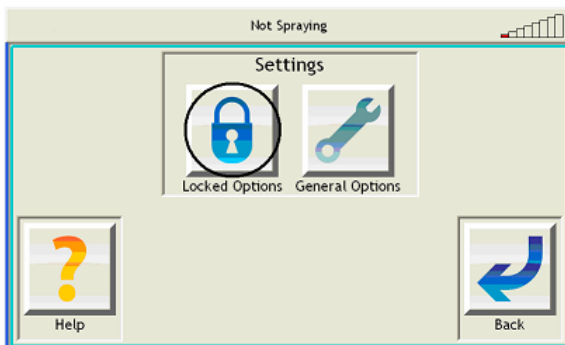
To input or amend the settings, depress the **Settings Button** on the **Main Menu**.

The **Settings Screen** is then displayed.



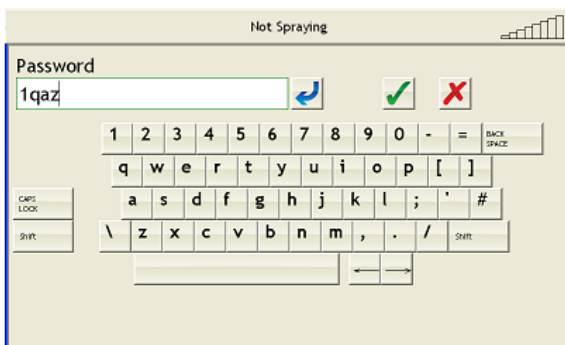
There are two different types of settings to select from: **Locked Options** and **General Options**.

To return to the **Main Menu** depress the **Return Arrow** . To access help specific to this screen, depress the **Help Button** .



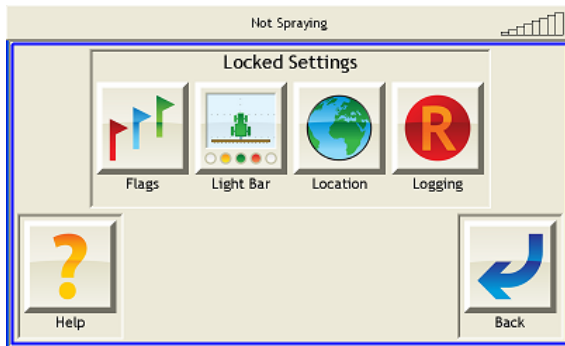
To enter the **Locked Settings Screen**, depress the **Locked Options Button** .

The **Full Keyboard** is then displayed so that a password can be input.

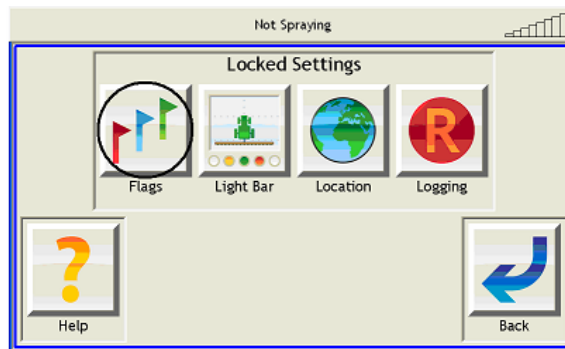


Enter the password '1qaz' and then depress the **Tick Button** .

The **Locked Settings Screen** is then displayed.

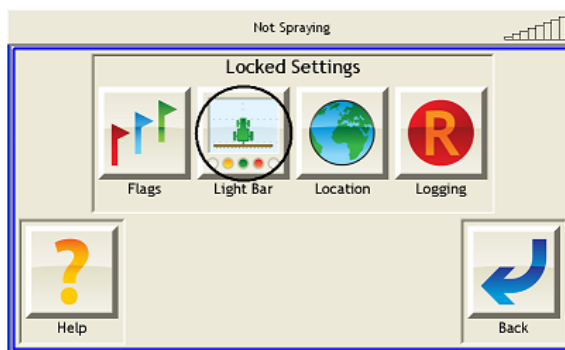


This screen provides access to four further screens: the [Flags Screen](#), the [Light Bar Screen](#), the [Choose Location Screen](#) and the [Logging Screen](#).



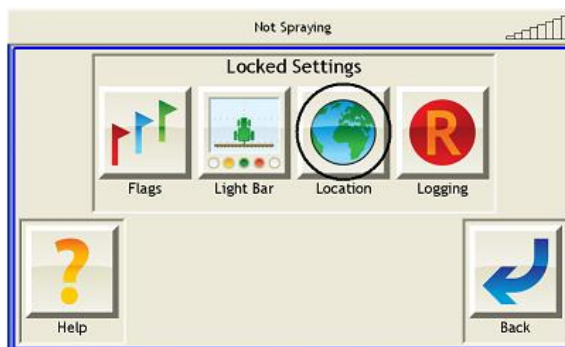
To enter the [Flags Screen](#), depress the [Flags Button](#) .


The [Flags](#) are used to mark locations so that a location can be returned to.



To enter the [Light Bar Screen](#), depress the [Light Bar Button](#) .

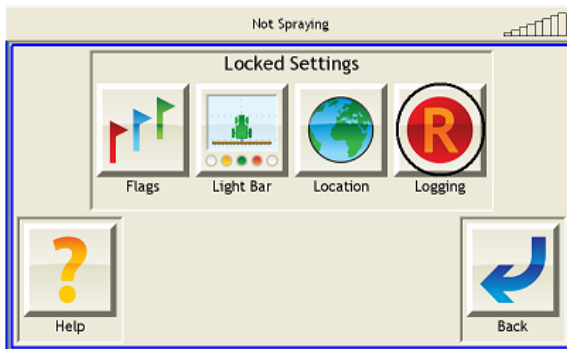
The [Light Bar](#) indicates how accurately the vehicle is following the [Guidance Line](#). The lights on the bar change colour when the vehicle steers off course. The distance at which the lights are set can be amended in this screen.



To enter the [Choose Location Screen](#), depress the [Location Button](#) .

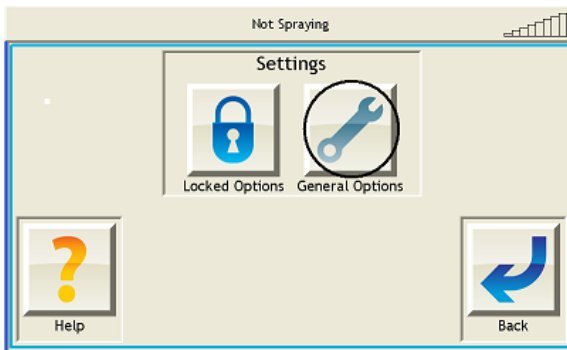
The [Choose Location Screen](#) should be updated to show the continent and country in which Field Master is being used.

This screen also includes a language option.



To enter the [Logging Screen](#), depress the [Logging Button](#) .

When enabled, Field Master logs all the raw data received through its ports. These logs can then be analysed should an error occur.

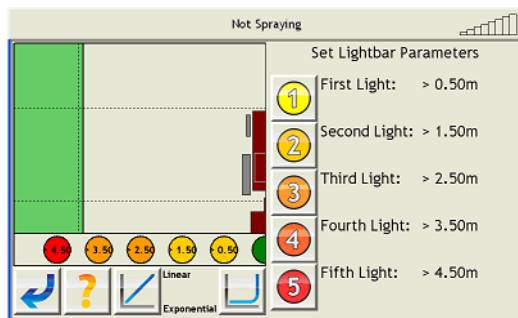


To enter the [General Settings Screen](#), depress the [General Options Button](#) .

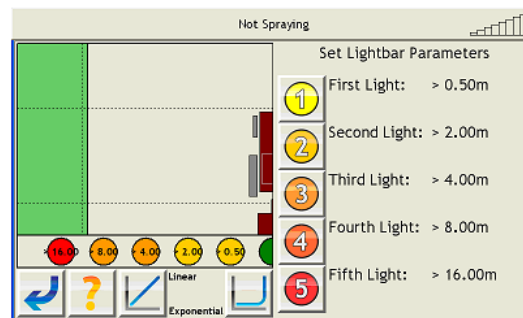
The [General Settings Screen](#) is then displayed. This screen displays information about printer functions and the units of measurements being used by Field Master.

The Light Bar Screen

The parameters on the **Light Bar** can be set so that the lights change colour at specific distances when the vehicle steers off the **Guidance Line**. The further the vehicle is off line, the more lights are shown and each light is darker in tone from yellow through to red. When the vehicle is following the **Guidance Line**, a green light is shown in the centre of the **Light Bar**. The distances at which these lights change colour can be amended and can be set to follow a linear or exponential pattern.



These distances follow a linear pattern.



These distances follow an exponential pattern.

First Light: > 0.50m

A linear pattern is created when the width between each light is the same. The measurements show the distance of each light from the **Guidance Line**.

Second Light: > 1.50m

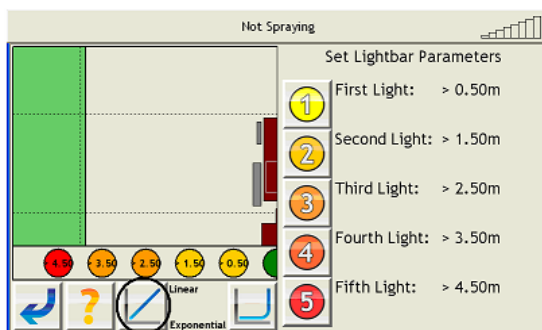
In this example, there is a width of 1 metre between each light and so the distance of each light from the **Guidance Line** increases by 1 metre each time.


Third Light: > 2.50m

Fourth Light: > 3.50m

The input width is applied to the lights on the left and right of the **Guidance Line**. For the first light on the left to be a width apart from the first light on the right, the distance from the first light to the **Guidance Line** must be half of the input width.

Fifth Light: > 4.50m



To select a linear pattern, depress the **Linear Button** .

The width can then be input using the [Distance Editor](#).

First Light: > 0.50m

Second Light: > 2.00m

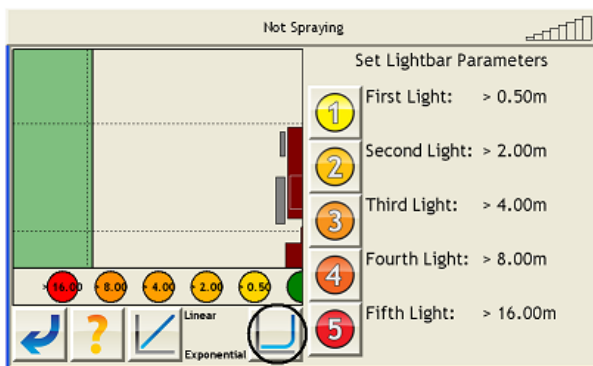
Third Light: > 4.00m

Fourth Light: > 8.00m

Fifth Light: > 16.00m

An exponential pattern is created when the width between each light is double the previous width. The measurements show the distance of each light from the [Guidance Line](#).

In this example, the width between the first lights on each side of the Guidance Line is 1 metre. Therefore, the width between the first and second lights is 2 metres and continues to double between the second and third lights and the third and fourth lights.

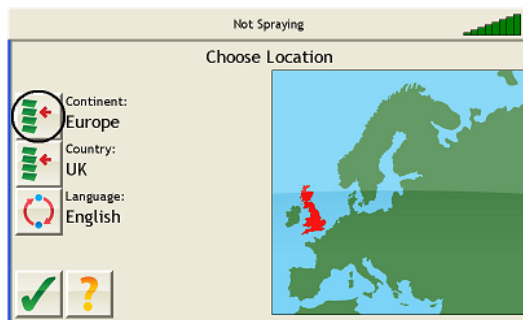


To select an exponential pattern, depress the [Exponential Button](#).

The width can then be input using the [Distance Editor](#).

The Choose Location Screen

In the United Kingdom, a projection known as OSGB (Ordnance Survey Great Britain) is used to convert the WGS84 latitude and longitude into Ordnance Survey grid co-ordinates. For all other countries, a suitable alternative projection is used. This provides a positioning framework which can be used for GPS. In order for Field Master to apply a projection, the continent and country must be input.

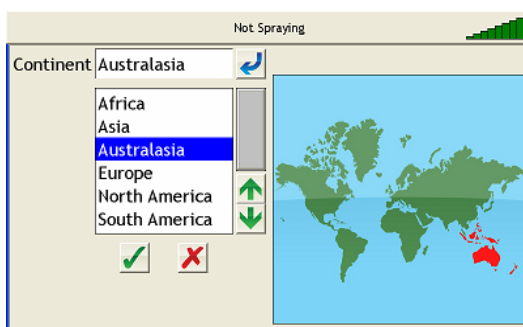



To input the continent, depress the first **Selection Button** .

The **Continent Screen** will then be displayed.




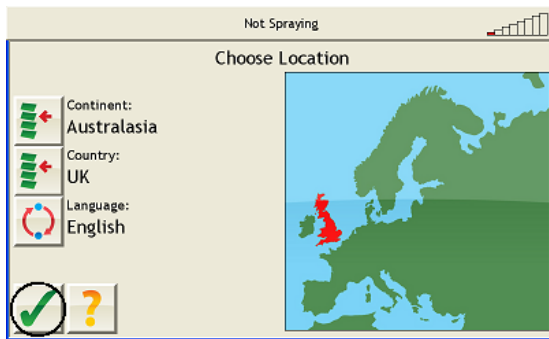
When this screen appears, the current continent is shown in the box at the top of the screen and in red on the map of the world. It is also shown in the selection box with a white font and a blue background.





To change the continent, depress the **Arrow Buttons**  until the correct continent is highlighted in blue. Each time a continent is highlighted in blue, it is displayed in the box at the top of the screen and shown on the world map too.

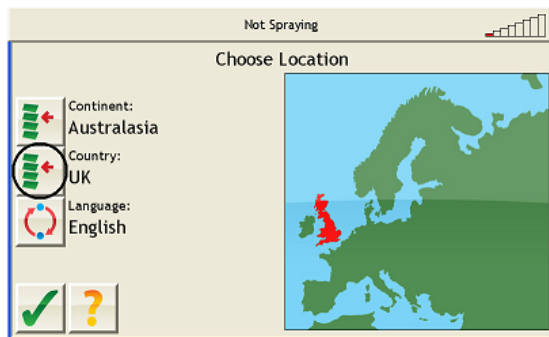
To revert to the current continent, depress the **Return Arrow** .


To return to the **Choose Location Screen** without making any changes, depress the **Cross Button** .



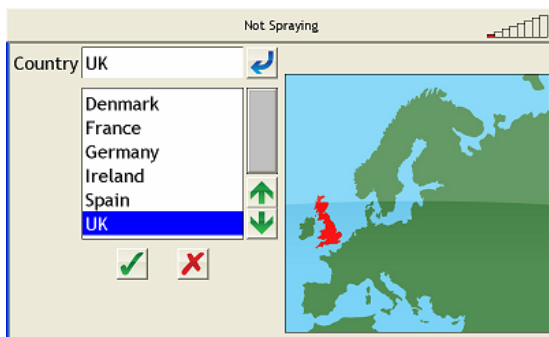
To accept the new continent, depress the **Tick Button** .

The **Choose Location Screen** will reappear and the new continent will be displayed next to the first **Selection Button** . However, the map on the right of the screen will still display the current country.

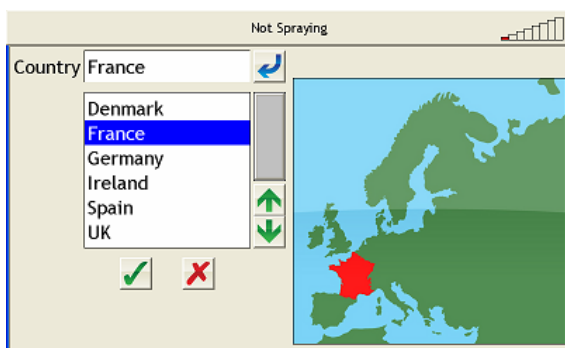



To input the country, depress the second **Selection Button** .


The **Country Screen** will then be displayed.






If the continent has not been amended, the current country will be displayed when this screen appears. The current country will be shown in the box at the top of the screen and in red on the map of the world. It will also be shown in the selection box with a white font and a blue background.

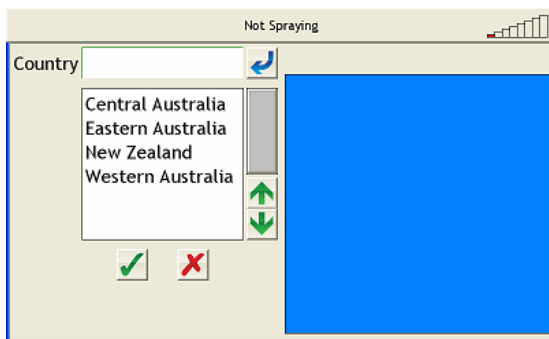


To change the country, depress the **Arrow Buttons**  until the correct country is highlighted in blue. Each time a country is highlighted in blue, it is displayed in the box at the top of the screen and shown on the world map too.

To revert to the current country, depress the **Return Arrow** .

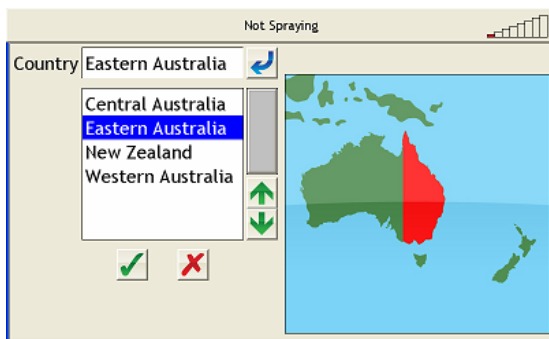
To return to the **Choose Location Screen** without making any changes, depress the **Cross Button** .


To accept the new country, depress the **Tick Button** . The **Choose Location Screen** will reappear showing the new country next to the second **Selection Button**  and on the map on the right of the screen.




If the continent has been amended, a current country will not be displayed when this screen appears. Instead, the box at the top of the screen will be empty and will be bordered in green. The right side of the screen, where the map is displayed, will be shown as a blank blue square.

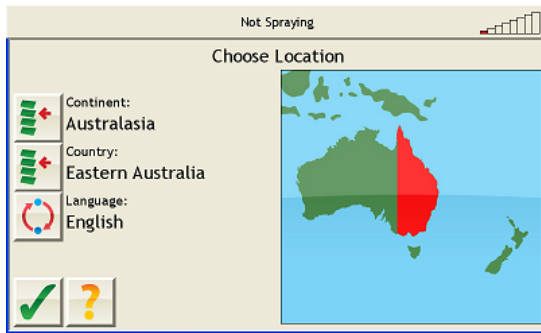
The countries displayed to select from will relate to the continent previously selected. In the example above, Australasia has been selected as the continent.





To select a country, depress the **Arrow Buttons**  until the correct country is highlighted in blue. Each time a country is highlighted in blue, it is displayed in the box at the top of the screen and shown on the world map too.


To revert to the current setting of no country selected, depress the **Return Arrow** .

To return to the **Choose Location Screen** without making any changes, depress the **Cross Button** .






To accept the new country, depress the **Tick Button** . The **Choose Location Screen** will reappear showing the new country next to the second **Selection Button**  and on the map on the right of the screen.

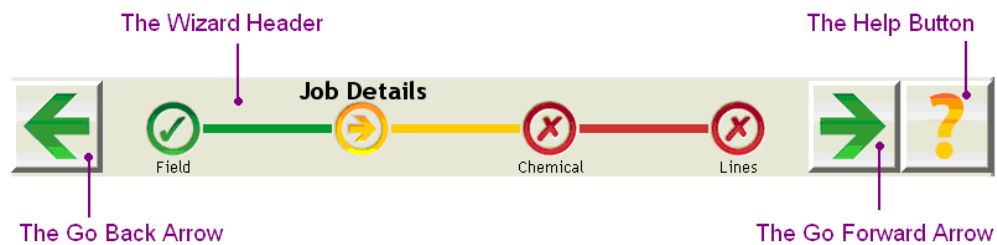
To return to the **Locked Settings Screen**, depress the **Tick Button** .

To access help specific to this screen, depress the **Help Button** .


The Job Wizard

When the **New Job Button**  or the **Edit Job Button**  is depressed, the first of four **Setup Screens** is displayed.

The **Wizard Header** is displayed at the top of each of the **Setup Screens** and shows the order in which the screens appear. The current screen is shown as a yellow arrow , screens in which data has been input are shown as green ticks  and screens that are to be completed are shown as red crosses .

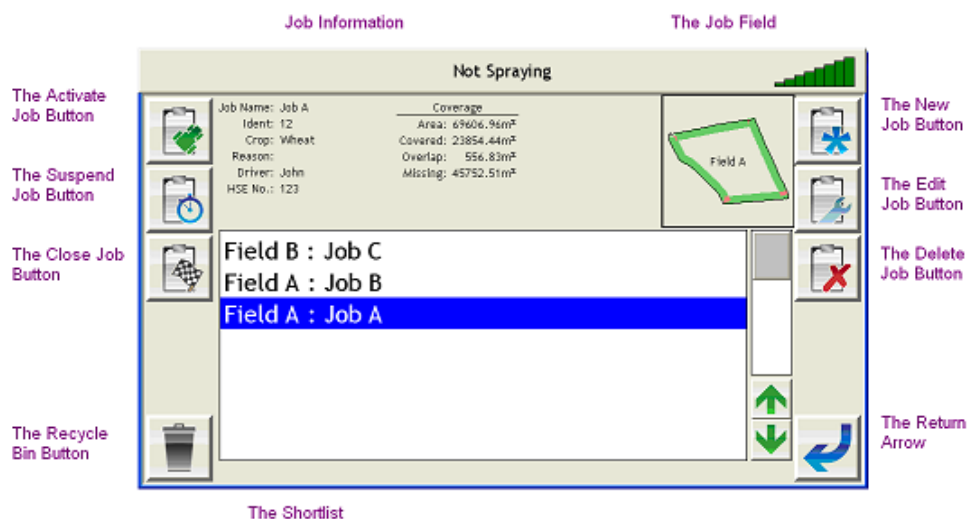


The Jobs _Planner

To input or edit information about Jobs, depress the **Planner Button** .



The **Jobs Planner Screen** will then be displayed. (The **Job Planner Screen** below shows all of the buttons that can be depressed from this screen. However, these buttons are not all displayed at the same time. Only buttons appropriate to the status of a Job will be available to depress.)



The **Job Planner Screen** displays details of active, running and suspended Jobs. If there are not any active, running or suspended Jobs, this screen will appear without any Job information.

A Job is displayed as active if the software is shut down without suspending or finishing a running Job.

The **Job Information** and the **Job Field** displayed at the top of the **Job Planner Screen** refer to the Job that is highlighted in blue in the **Job list**. To highlight a different Job, scroll up or down the **Shortlist** using the **Arrow Buttons**

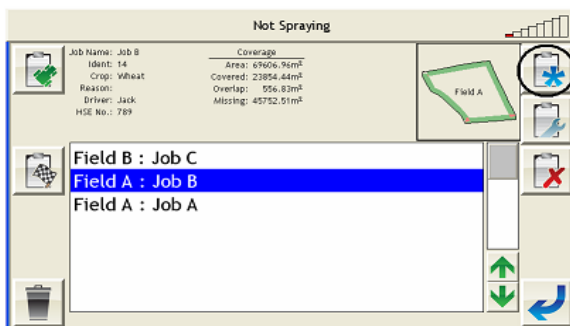
The **Job Information** is displayed in three sections at the top of the screen.

Job Name: Job A		Coverage	
Ident: 12		Area: 69606.96m ²	
Crop: Wheat		Covered: 23854.44m ²	
Reason:		Overlap: 556.83m ²	
Driver: John		Missing: 45752.51m ²	
HSE No.: 123			

The first section, shown on the left side of the screen, displays the Job name, identity, crop, reason and driver as well as the HSE number. The other sections, shown in the centre of the screen, are shown for a few seconds at a time. These examples show ‘Coverage’ information and ‘Chemical’ information. Other sections, such as ‘Weather’ may also be shown.

Job Name: Job A		Chemical	
	Quantity	Product	MAPP No.
Crop: Wheat	15l	Polysect Insecticide	12588
Reason:	12kg	Stop Bugs	12097
Driver: John			
HSE No.: 123			

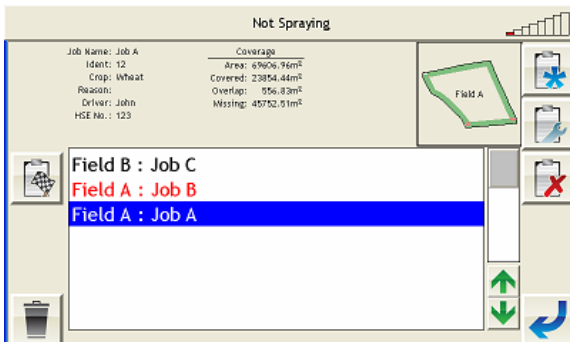
The ‘Coverage’ section includes the area of the field, the area covered so far, the area of overlap and the area not yet covered. The ‘Chemical’ section displays the products used during the Job as well as the quantities.



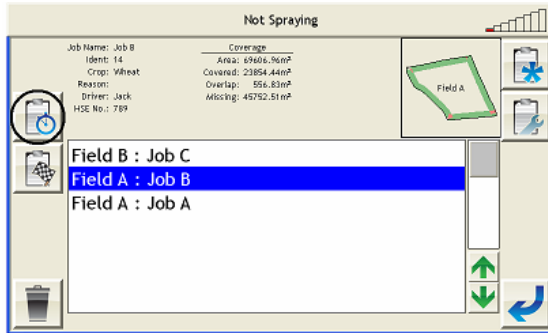
To create a new Job, depress the **New Job Button**


The **Job Wizard** for a new (blank) Job will then be displayed.

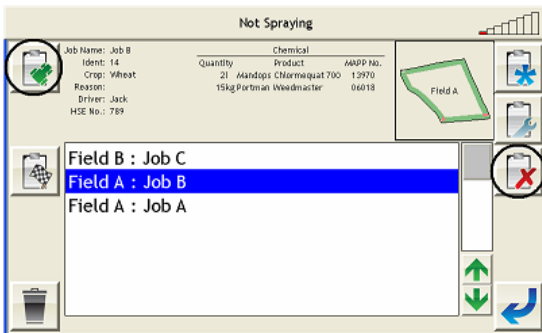
Only one Job can be active at any given time. If a Job displayed in the **Job list** is already active, this must be suspended before a new Job can be run.






If a Job is running it will be shown in red font. If a Job is suspended it will be shown in black font. If a Job is active it will be shown in green font. In this example, Job B is running and Jobs A and C are suspended.

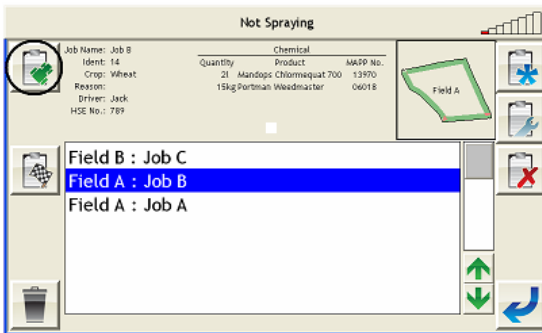



To suspend a running or active Job, highlight the Job in the **Job list** and then depress the **Suspend Job Button** .



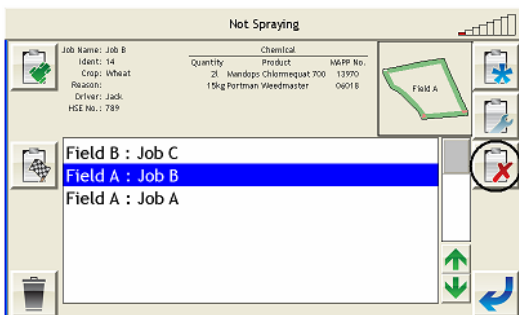
The font will then change from red to white and the **Suspend Job Button**  will disappear from the screen. (When a suspended Job is highlighted in the **Job List**, the font is shown in white.)

The **Run Job Button**  and the **Delete Job Button**  will then be displayed.



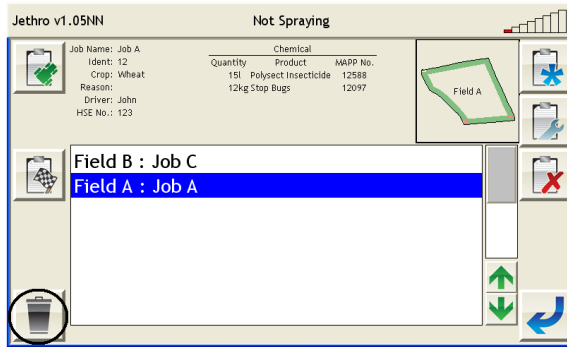
To run a suspended Job, highlight the Job in the **Job list** and depress the **run Job Button** .

This will then load the relevant Job details and the **Guidance View Screen** will then be displayed.



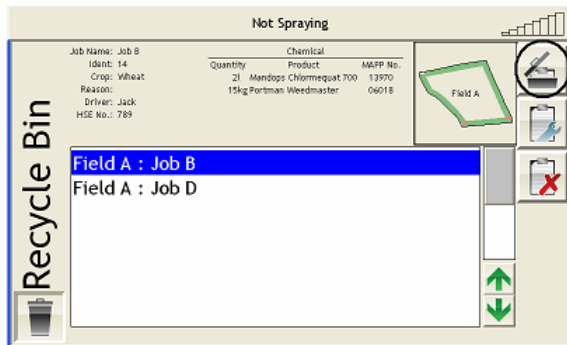
To delete a Job, highlight the Job in the **Job list** and depress the **Delete Job Button** .

The Job will then be deleted and placed in the **Recycle Bin**.



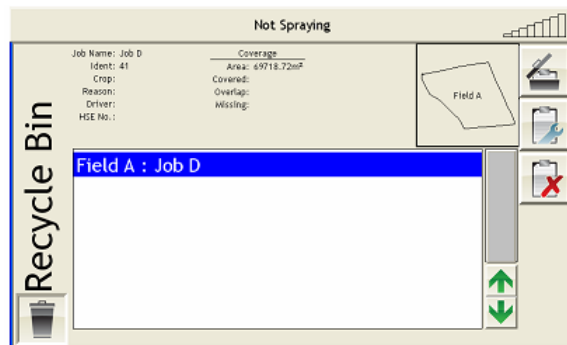
To reinstate a Job that has been deleted, depress the **Recycle Bin Button**

The **Recycle Bin Screen** will then be displayed.

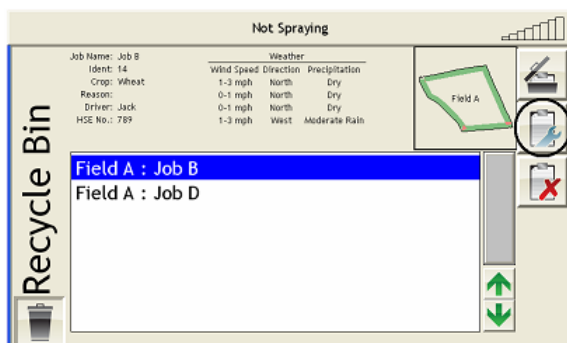


To reinstate a deleted Job, scroll up or down the **Recycle Bin List** using the **Arrow Buttons** until the relevant Job is highlighted in blue.

Then depress the **Reinstate From Bin Button**

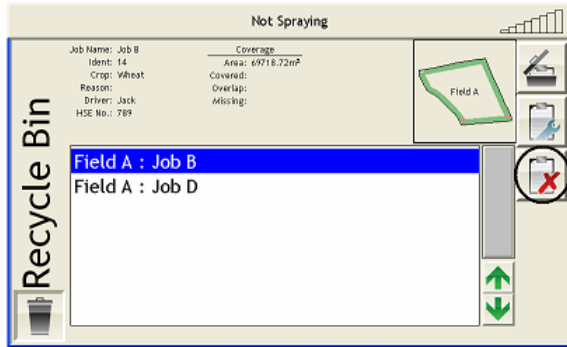


The highlighted Job will then be reinstated to the **Job List** and if there is a Job below in the **Recycle Bin List**, this will then be highlighted in blue.



To edit or view a deleted Job, highlight the Job in the **Recycle Bin List** and then depress the **Edit Job Button**

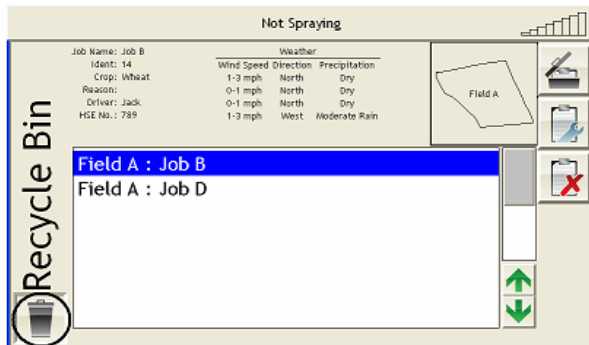
The **Job Wizard** for the highlighted Job will then be displayed.



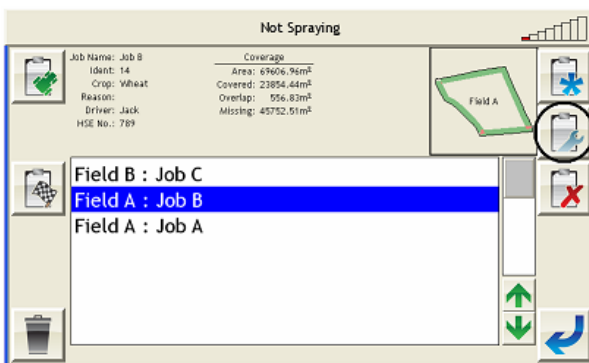
To permanently delete a Job, highlight The Job in the **Recycle Bin List** and Then depress the **Delete Job Button**



The highlighted Job will then be permanently deleted and if there is a job below in the **Recycle Bin List**, this will then be highlighted in blue.



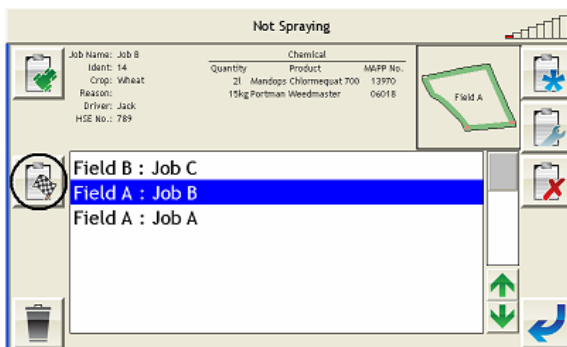
To return to the **Job List** without making any changes to the deleted Jobs, depress the **Recycle Bin Button**



To edit a Job, highlight the Job in the **Job list** and then depress the **Edit Job Button**



The **Job Wizard** for the selected Job will then be displayed.



To finish a Job, highlight the Job in the **Job list** and depress the **Finish Job Button**



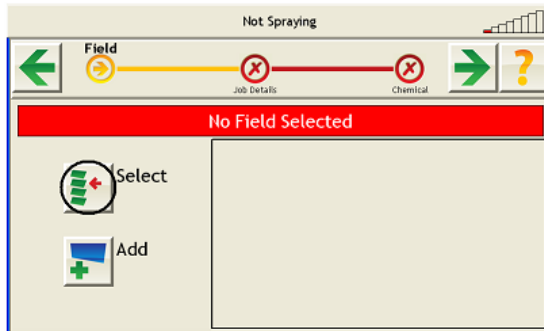
Once a Job is finished, it is archived in the appropriate field's records and removed from the **Job List**. The job can no longer be amended but can be viewed in the **Field Job Viewer**.

To return to the **Main Menu**, depress the **Return Arrow**



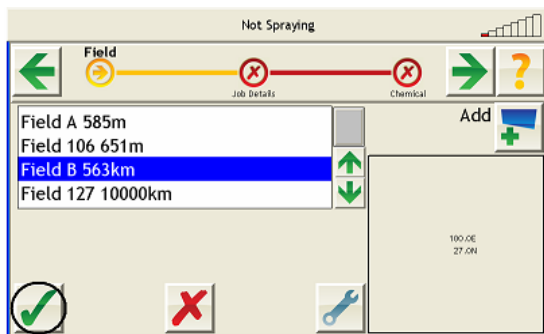
Field Selection Screen

The **Field Selection Screen** is displayed when the **New Job Button** or the **Edit Job Button** is depressed.



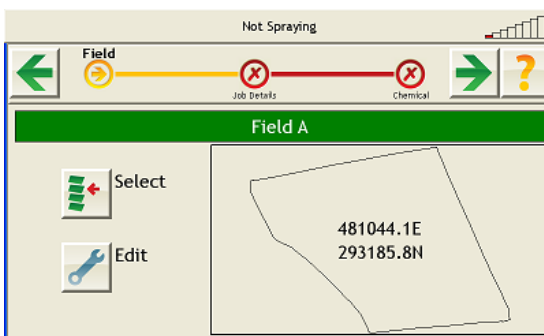
If a new Job is being created, a field must be selected

To select a field, depress the **Selection Button** .



The **Field Shortlist Screen** will then be displayed.

Using the **Arrow Buttons** , scroll up or down until the required field is highlighted. Then depress the **Tick Button** .



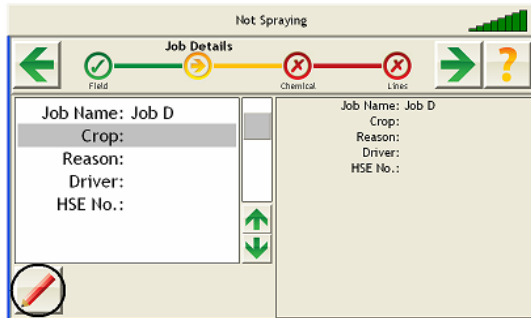
The **Field Selection Screen** will then reappear with the selected field displayed.



To return to the **Field Selection Screen** without selecting a field, depress the **Cross Button** .

If the field that has been selected has already been created, the **Lines Screen** will be added to the **Wizard Header** when the **Go Forward Arrow** is depressed.

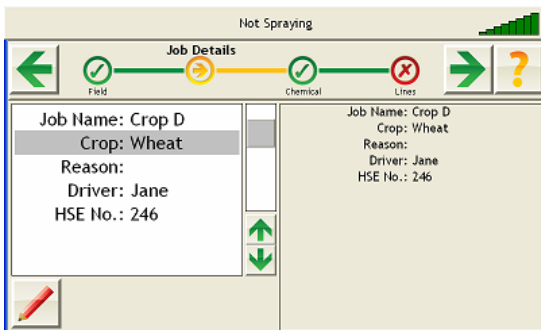
The Job Details Screen



The Job name, crop, reason, driver and HSE number can be input via this screen.



To input the **Job Details**, use the **Arrow Buttons**  to scroll up and down to highlight a heading. Then depress the **Pencil Button** .

The **Full Keyboard** will then appear. Once the details have been input, they are displayed on the right side of the screen.

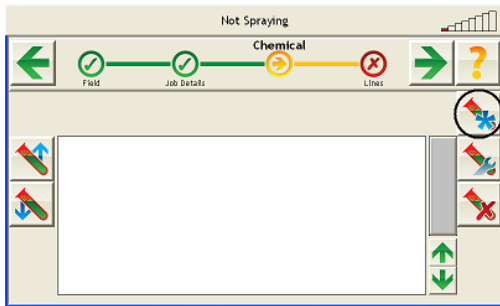



If this screen is entered to edit details, use the **Arrow Buttons**  to scroll up and down to highlight the heading that needs to be amended. Then depress the **Pencil Button** .

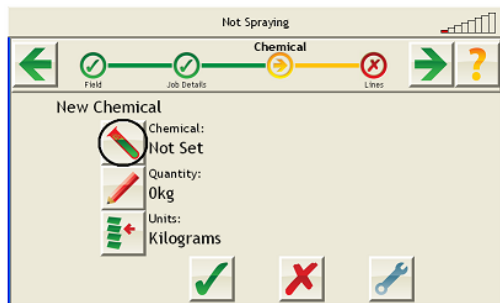
The **Full Keyboard** will then appear so the updated details can be input.

The Chemical Screen


The chemicals used to undertake a Job along with the quantities used are recorded in this screen.

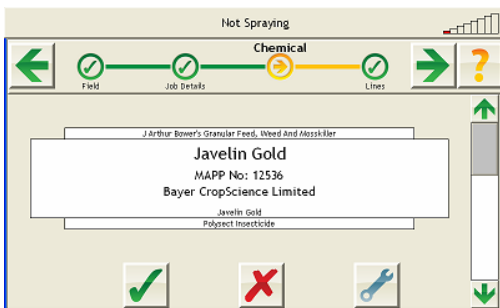


To add a chemical to the **Used Chemical List**, depress the **New Chemical Button** .



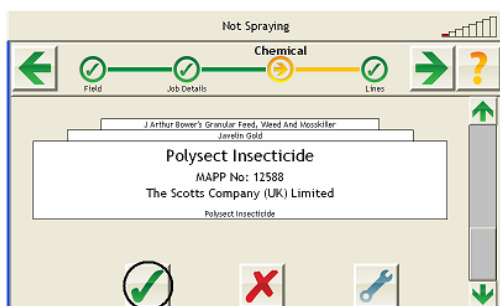
The **New Chemical Screen** will then be displayed.


To select a chemical, depress the **Chemical Button** .




The **Chemical Shortlist** will then be displayed.

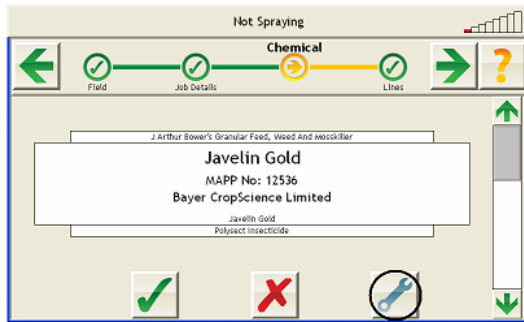
Whenever a chemical is selected for use, it is added to the **Chemical Shortlist**. The first time this screen appears the **Chemical Shortlist** will be empty.



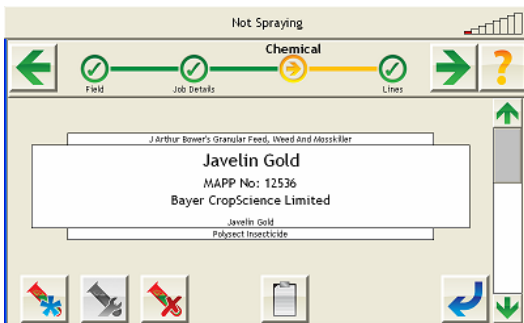
To select a chemical from the **Chemical Shortlist**, the chemical's tab must be fully open. Then depress the **Tick Button** .

The **New Chemical Screen** will then reappear with the selected chemical displayed.

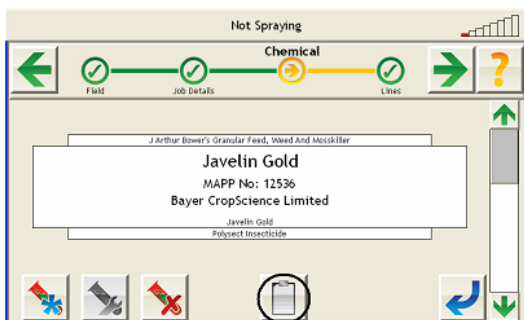
Use the **Arrow Buttons**  to open up different tabs and to scroll through the chemicals available in the **Chemical Shortlist**.



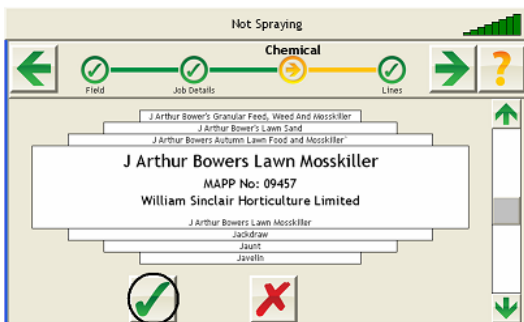
To select a chemical that is not in the **Chemical Shortlist**, depress the **Edit Button**



The **Chemical Shortlist** will remain on the screen but the buttons along the bottom of the screen will change.



To search for a chemical in the **Field Master Chemical List**, depress the **List Button**



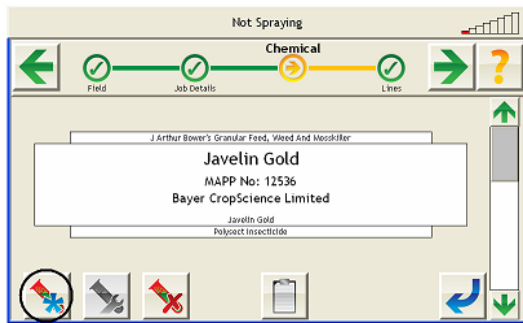
The **Field Master Chemical List** will then be displayed.


To select a chemical from this list, the chemical's tab must be fully open. Then depress the **Tick Button**

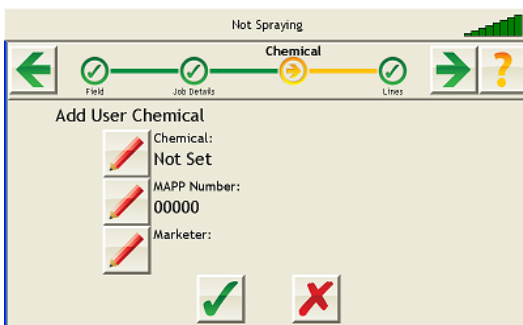


The **Chemical Shortlist** will reappear with the selected chemical added to it.


Use the **Arrow Buttons** to open up different tabs and to scroll through the chemicals available in the **Field Master Chemical List**.





To add a new chemical that is not included in the **Field Master Chemical List**, depress the **New Chemical Button** .



The **Add User Chemical Screen** will then be displayed.

To input the name of the new chemical, depress the first **Pencil Button** . The **Full Keyboard** will then be displayed.

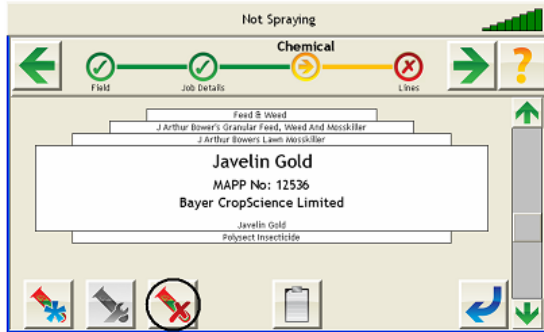
To input the chemical MAPP number, depress the second **Pencil Button** . The **Number Editor** will then be displayed.


To input the chemical Marketer, depress the third **Pencil Button** . The **Full Keyboard** will then be displayed.

To add the new chemical details to the **Chemical Shortlist**, depress the **Tick Button** .





The **Chemical Shortlist** will then reappear and the tab for the newly added chemical will be fully open.

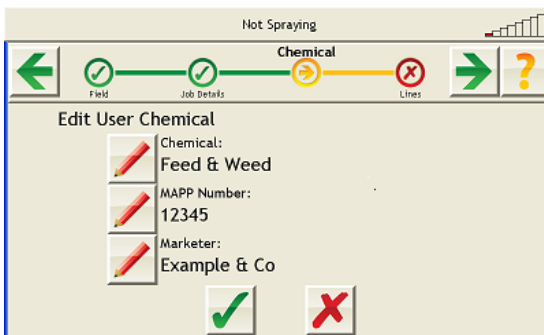


To delete a chemical from the **Chemical Shortlist**, depress the **Delete Chemical Button** .





To amend the details of a chemical on the **Chemical Shortlist**, depress the **Edit Chemical Button** .


The **Edit Chemical Button**  is only available to edit chemicals that have been added to the **Chemical Shortlist** rather than selected from the **Field Master Chemical List**.



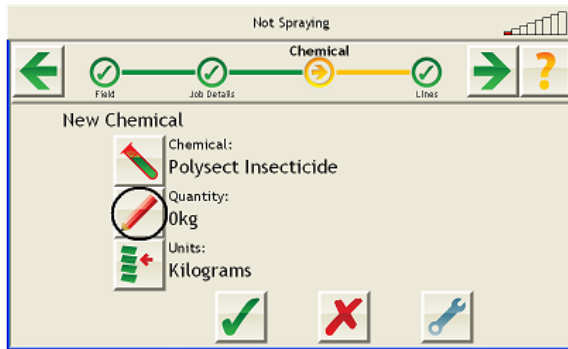
The **Edit User Chemical Screen** will then be displayed.

To amend the name of the chemical, depress the first **Pencil Button** . The **Full Keyboard** will then be displayed.

To amend the chemical MAPP number, depress the second **Pencil Button** . The **Number Editor** will then be displayed.

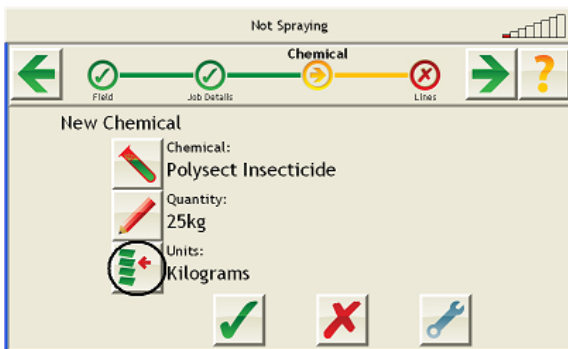
To amend the chemical Marketer, depress the third **Pencil Button** . The **Full Keyboard** will then be displayed.

To update the chemical details in the **Chemical Shortlist**, depress the **Tick Button** .



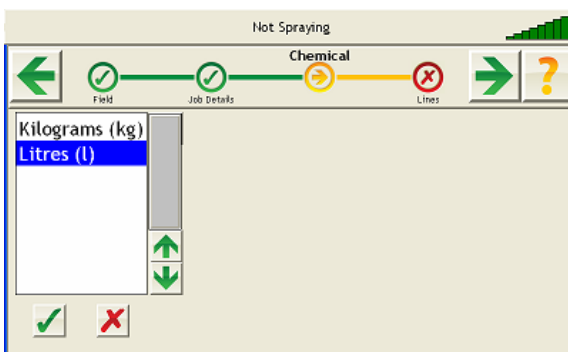
To input the quantity of the chemical, depress the **Pencil Button**

The **Number Editor** will then be displayed so the quantity can be input.



To select the units of measurement, depress the **Selection Button**

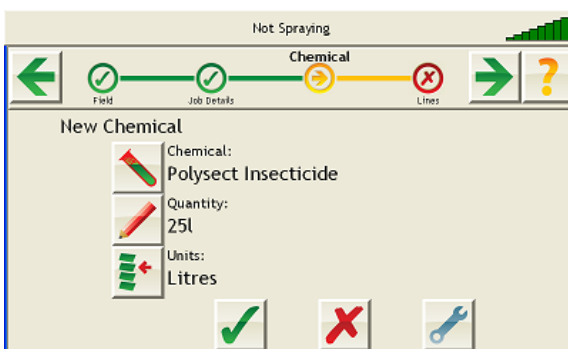
The **Units Shortlist** will then be displayed.



Use the **Arrow Buttons** to scroll up or down the **Units Shortlist** to highlight either kilograms or litres. Then depress the **Tick Button** to select the highlighted measurement.

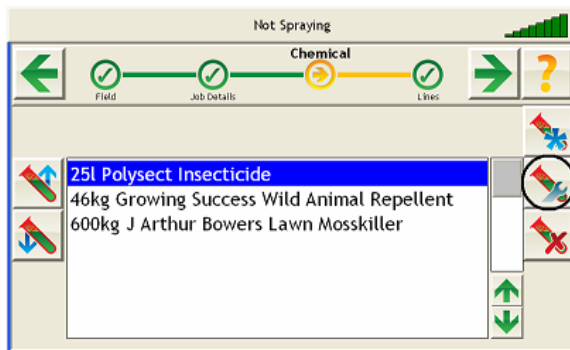
The **New Chemical Screen** will then reappear with the selected units displayed.



To return to the previous screen without changing the unit of measurement, depress the **Cross Button** .

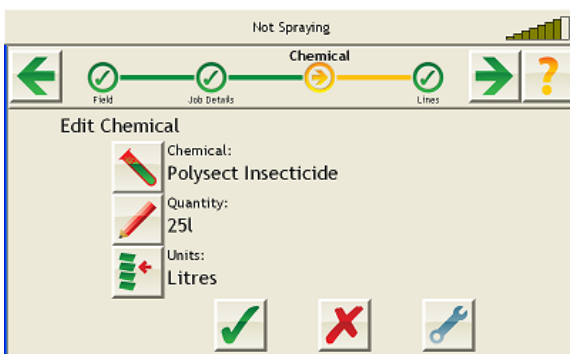


To add the selected chemical and quantity to the **Used Chemical List**, depress the **Tick Button** .

To return to the **Used Chemical List**, without adding this chemical, depress the **Cross Button** .





To amend the details for a chemical, use the **Arrow Buttons**  to scroll up and down to highlight the chemical. Then depress the **Edit Chemical Button** .




The **Edit Chemical Screen** will then be displayed.

To select a different chemical, depress the **Chemical Button** . The **Chemical Shortlist** will then be displayed.

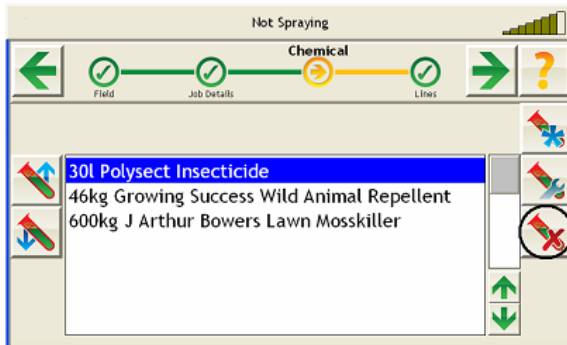
Alternatively, depress the **Edit Button** . The **Chemical Shortlist** will then be displayed with the buttons available to add a new chemical.

To amend the quantity of the chemical, depress the **Pencil Button** . The **Number Editor** will then be displayed.

To amend the units of measurement, depress the **Selection Button** . The **Units Shortlist** will then be displayed.

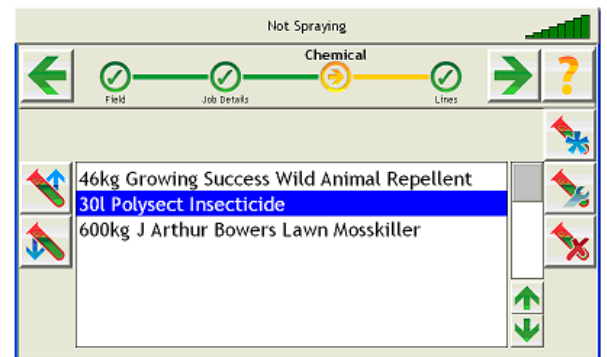
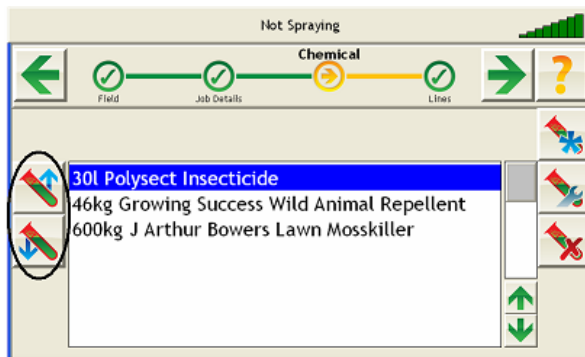
To update the chemical details, depress the **Tick Button** . The **Used Chemical List** will then reappear with the updated details.

To return to the **Used Chemical List** without making any changes, depress the **Cross Button** .



To delete the details for a chemical, use the **Arrow Buttons** to scroll up and down to highlight the chemical.

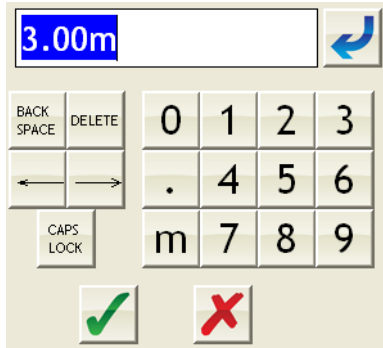
Then depress the **Delete Chemical Button** .




To change the order in which the chemicals appear on the screen, use the **Arrow Buttons** to scroll up and down to highlight the chemical that needs to be moved. Then depress the **Move Chemical Buttons** .

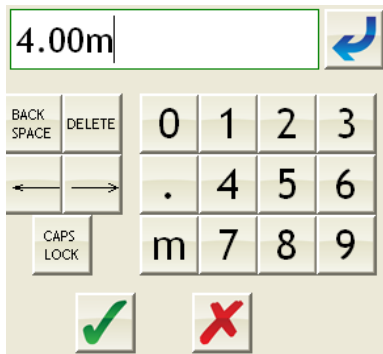
The Distance Editor

When a button is depressed to input or amend a distance, the keypad below will appear.





The current distance is shown in white font with a blue background and enclosed in a box with a black border.


Press the numeric keys to enter the updated distance. The current distance is automatically overridden when the updated distance is input unless the **Edit Arrows**  are used.




The updated distance is shown in black font with a white background and enclosed in a box with a green border.

To revert to the current distance, depress the **Return Arrow** .

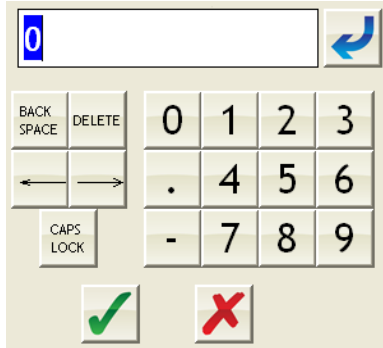
To accept the updated distance, depress the **Tick Button** . The original screen will then reappear showing the updated information.

To return to the original screen without making any changes, depress the **Cross Button** .


By default, all distances shown are metric measurements but this can be changed to imperial measurements by selecting the **Settings Button**  on the **Main Menu**.

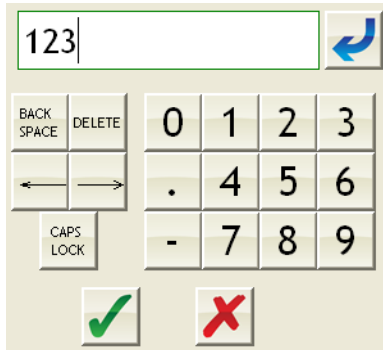
The Number Editor

When a button is depressed to input or amend a number, the keypad below will appear.





The current number is shown in white font with a blue background and enclosed in a box with a black border.


Press the numeric keys to enter the updated number. The current number is automatically overridden when the updated number is input unless the **Edit Arrows**  are used.



The updated number is shown in black font with a white background and enclosed in a box with a green border.

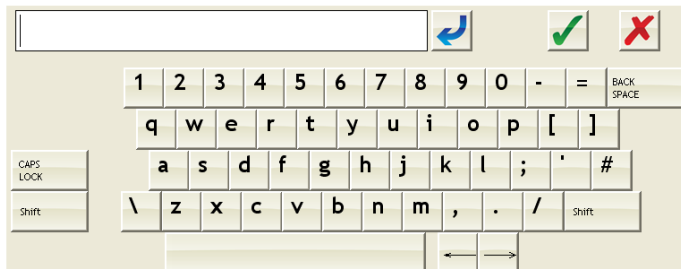
To revert to the current number, depress the **Return Arrow** .

To accept the updated number, depress the **Tick Button** . The original screen will then reappear showing the updated information.

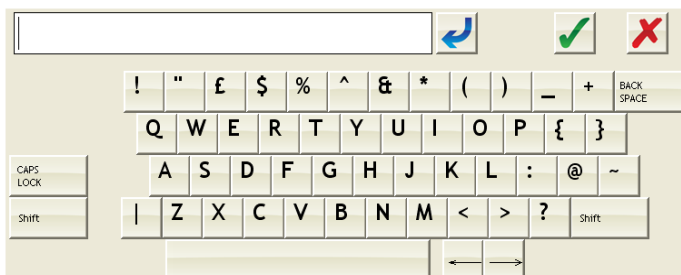
To return to the original screen without making any changes, depress the **Cross Button** .

The Full Keyboard

When text needs to be input or amended, the **Full Keyboard** appears on the screen.



There are two different keyboards. The first keyboard contains keys with lower case letters and numbers on. The 'lower case keyboard' is automatically displayed when the screen appears.

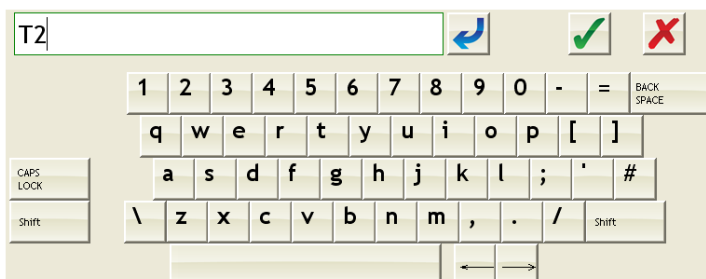


The second keyboard contains upper case letters and the range of symbols found above the numbers on a standard keyboard. The 'upper case keyboard' is displayed when the 'Shift' key or 'Caps Lock' is depressed.


If the 'Shift' key is depressed, the keyboard reverts back to the 'lower case keyboard' once a character has been entered in the input box. If the 'Caps Lock' is depressed, the 'upper case keyboard' remains on display until the 'Caps Lock' is pressed again.





When the **Full Keyboard** is displayed, the input box is shown with a black border and current text is in a white font with a blue background.



When the information is updated, the border around the input box changes to green and the updated text is shown in a black font with a white background.

To revert to the current information, depress the **Return Arrow** . The border of the box will appear in green.

To accept the updated information, depress the **Tick Button** . The original screen will reappear showing the updated information.

To return to the original screen without making any changes, depress the **Cross Button** .