Leica iNEX

Mapping & Guidance Display

User Manual

- when it has to be **right**

Leica Geosystems

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iNEX User Manual

Written for iNEX Mapping & Guidance Display

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1 iNEX Overview

1.1 Product Description

- The Leica iNEX is a GPS-based guidance system with the capability to interface to a number of different 3rd party components such as GPS receivers, rate controllers and steer controllers.
- The Leica iNEX is a robust single body computer system manufactured specifically for use in agriculture. It incorporates an intelligent power system which protects the computer from abnormal input power often found in agricultural vehicles.
- When coupled with a Leica mojoRTK, the Leica iNEX extends the capability of the mojoRTK to a large, full colour touch screen, incorporating additional features including more Guidance patterns, automatic section shutoff and advanced data recording.

1.2 iNEX Components

1.2.1 iNEX Display

a. Power button

b. Brightness down/up

c. Remote buttons 1 to 4

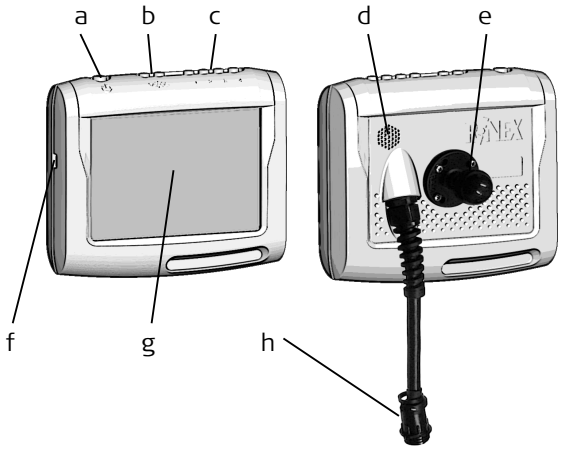
d. Speaker

e. RAM mount

f. USB port

g. Touch screen

h. Display connector (male)



iNEX Description

Power Button
Press to turn iNEX on and off. Hold for 2 seconds when turning iNEX on to start Launcher mode.

Brightness Down/Up
Press repeatedly to turn iNEX Display backlight brightness down or up.

Remote Buttons 1 To 4
Four separate buttons which can be assigned shortcut functions from within the system.

Speaker
Emits sounds made by the iNEX.

RAM Mount
Mounting point for the iNEX Display.

USB Port
Used for data transfer and iNEX software upgrades.

Touch Screen
The iNEX Display is touch sensitive and is the main user interface.

Display Connector (male)
The connection point for the iNEX vehicle cabling. Allows easy movement of system between vehicles.

1.2.2 iNEX Vehicle Cable

a. Display connector (female)

b. Port A (blue)

c. Port B (yellow)

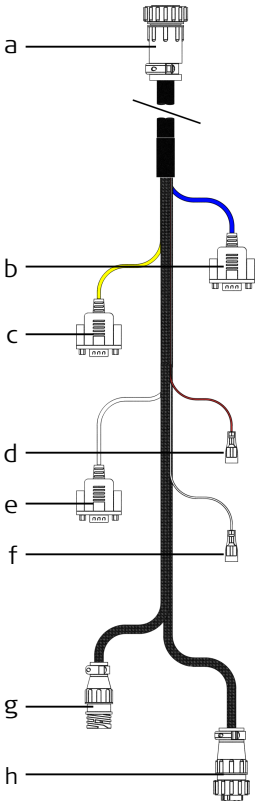
d. Remote Master Switch (brown)

e. CANbus (white)

f. Remote Input (white)

g. Power input connector

h. Port C



Vehicle Cable Description

Display Connector (female)
Connects to the iNEX Display.

Port A (blue)
Serial connection for 3rd party devices such as steering or rate controllers.

Port B (yellow)
Serial connection for GPS receivers or mojoRTK. Also used for 3rd party devices when CANbus used for GPS source.

Remote Master Switch (brown)
Detects 12-volt from a master switch to turn treatment on/off when configured.

CANbus (white)
Connects to 3rd party CANbus devices including GPS receivers.

Remote Input (white)
Detects a momentry 12-volt pulse to trigger a user assigned shortcut fuction.

Power Input Connector
Connects to the power cable

Port C
Connects to the optional AS310.

1.2.3 Power Cable

a. Power connector

b. Red wire (12-volt positive)

c. Black wire (negative ground)

Power Cable Description

Power Connector
Supplies 12-volt power to the iNEX via the Power Input connector on the Vehicle cable.

Red Wire (12-volt positive)
Connects to a clean 12-volt power source, such as directly to a battery.

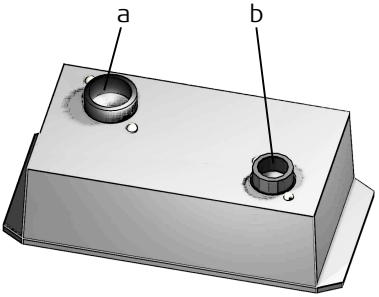
Black Wire (negative ground)
Connects to the vehicle's earth.

1.2.4 AS310 (Optional Component)

The AS310 is an optional component which is required for some 3rd party rate controllers when automatic section shut-off is being used.

a. Voltage port

b. Data port



AS310 Description

Data Port
Connects to Port C on the iNEX Vehicle Cable.

Voltage Port
Connects to various automatic section shut-off interface cables.

2 iNEX Installation

2.1 Before Installation

- Installation does not require specialist knowledge. However, Leica Geosystems recommends that installation of the iNEX equipment be performed by a qualified technician, because installation requires making electrical connections.
- Leica Geosystems is not liable for any damage, faults or risks related to installation or to the iNEX or your vehicle due to installation.
- Leica Geosystems declines all responsibility for any incorrect information in the iNEX Installation Manual.
- The following instructions are to be used as a general guide during the installation of the iNEX. For more specific instructions, please contact your point of purchase.
- Install the system in a clean and dry workshop environment. Failure to do so may cause the system to short or promote product malfunction.
- Route and secure all cables and wiring to ensure that they do not chafe or rub, thus causing premature failure.
- The average installation time will vary, but it should be approximately three to four hours per vehicle. The installation time may be more or less, depending on vehicle type.

2.2 Installing the iNEX Display

1. Read all instructions before attempting installation.

2. Attach the RAM mount arm, and separate RAM mount ball to the RAM mount on the iNEX Display.

3. Pick a suitable location to mount the Display by holding it up in place while checking for visibility out of the vehicle. The Display needs to be within easy reach of the operator when seated in the normal operating position, and ideally it will be easily visible in the forward vision of the operator.

4. When a suitable location to mount the Display has been selected, mark the position of where the RAM mount ball is to be mounted on the vehicle.

Note: There are a number of different RAM mounts available, including clamp on brackets, which may simplify the installation. RAM mount arms are also available in a number of different lengths; please contact your point of purchase.

5. Secure the RAM mount ball to the vehicle in the required location. Important: Use extreme caution whenever drilling holes or attaching any objects to the vehicle as there may be hidden cables or hoses. Never drill into the ROP system of any vehicle as this may damage the integrity of the system. Consult the vehicle's operating manual prior to drilling any holes.

6. Attach the Display to the RAM mount ball using the RAM mount arm. Once the Display is oriented in the correct direction, ensure the RAM mount is tightly secured.

2.3 Installing the Power Cable

The Power Cable should be connected to a clean 12-volt power system; however the iNEX will operate between 9 and 16 volts DC and as such will tolerate normal fluctuations found in a typical vehicle power system.

1. Connect the red wire to a 12-volt positive source.
2. Connect the black wire to the vehicle's earth.
3. Route the cable into the cab where the iNEX Vehicle Cable will be installed.

Note: The iNEX is a 12-volt DC (negative-to-earth) system only. Connecting to a 24-volt DC or a positive-to-earth system will cause damage which is not covered by warranty.

Do not connect the power cable to only one battery of a 24-volt system as this may cause damage to the vehicle's batteries and connected equipment.

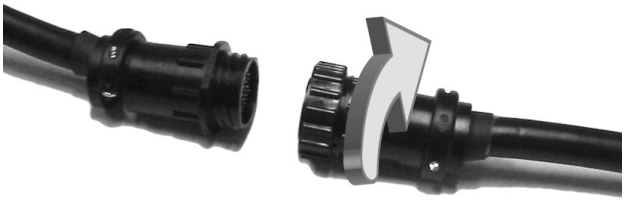
There are a number of other power cable options available, including a three wire power cable which can be connected to the vehicle ignition to turn the iNEX on and off with the vehicle's ignition key.

Also available are power cables terminated with common connections found in agricultural vehicles, such as the universal three pin circular connector and the John Deere power strip connector.

For more information on any of these cables, contact your point of purchase.

2.4 Installing the iNEX Vehicle Cable

1. Connect the Display connector on the vehicle cable to the iNEX Display. The connectors may need to be twisted until the locating tabs in the connectors align. Push the connectors firmly together while twisting the locking ring.



2. After the power cable has been connected to a clean 12-volt source, it can be connected to the Power input connector using the same twisting action. When the power connection is made to the iNEX Display, it will emit two short beeps to indicate it is powered.

3. If using serial NMEA GPS or a mojoRTK, connect the device to Port B (yellow cable) on the vehicle cable, using the appropriate serial cable.

4. If using a CANbus NMEA2000 GPS, connect the device to the CANbus port (white cable).

5. Where required, connect any supported 3rd party rate controller to Port A (blue cable), using the appropriate serial cable.

6. If using a GPSteer auto steer controller, then it should be connected to Port A if not being used by a rate controller, and Port B if Port A is used while Port B is free. Alternatively where both Port A & Port B are used, a USB to Serial converter cable can be obtained from your point of purchase.

Note: If you are unsure which cable should be used to connect another device, contact your point of purchase.

2.5 Connecting Remote Master Switch

The iNEX is designed to sense 12-volts DC from a master switch, which when configured will activate the treatment recording function on the iNEX.

It is recommended that the Remote Master Switch is connected to an existing master switch in the vehicle, however there are many options including 12-volts DC from a master valve, an implement switch or a separate toggle switch.

1. Connect a wire to the 12-volt positive on/off source, such as an existing master switch.
2. Connect the other end of the wire to the Remote Master Switch (brown cable) on the iNEX Vehicle Cable.
3. Consult the iNEX user manual for instruction on configuring the system to use the Remote Master Switch as the master switch source.

Note: The iNEX will detect 12-volt positive as the master switch being on and no power as the master switch being off.

2.6 Connecting Remote Input

The Remote Input can be connected to a momentary push-button switch which can then remotely trigger a user defined function on the iNEX, such as engage/disengage auto steering.

1. Connect 12-volts to one side of a momentary push-button switch.
2. Connect a wire from the other side of the momentary push-button switch to the Remote Input (white cable) on the iNEX Vehicle Cable.
3. Consult the iNEX user manual for instruction on configuring the Remote Button function to be triggered by the Remote Input.

Note: The 12-volts DC supplied to the Remote Master Switch and the Remote Input MUST be on the same 12-volt DC circuit to which the iNEX is connected.

2.7 Connecting the Optional AS310

The AS310 is required for some installations where automatic section shut-off is being used. The AS310 converts signals from the iNEX to output signals which can then be connected to 3rd party rate controllers and other section control equipment.

1. Mount the AS310 in a suitable out of the way location.
2. Connect Port C on the iNEX Vehicle Cable to the Data Port on the AS310. The connectors may need to be twisted until the locating tabs in the connectors align. Push the connectors firmly together while twisting the locking ring.
3. Connect the required automatic section control cable to the voltage port on the AS310, using the same twisting action.

3 Getting Started

3.1 Starting the iNEX

Prior to starting with this manual the iNEX should be completely installed into the vehicle in accordance with the instructions in the iNEX installation manual. When power is connected the iNEX Display will emit two short beeps. This will not immediately start the iNEX Display.

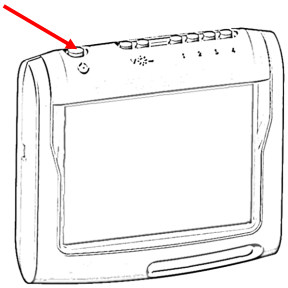
The iNEX may be started or shut down in either of two ways:

- Pressing the power button on the top of the iNEX Display.
- Vehicle ignition (using the optional 3 wire power cable Part# 1-2406)

3.1.1 Using the Power button

Using the standard 2 wire power cable (Part# 1-2408) the iNEX can only be turned ON using the power button.

To turn the iNEX ON simply press the power button, located on the far left top of the iNEX Display, and one long beep will be heard. Release the power button.



3.1.2 Using the Vehicle Ignition

If the iNEX has been correctly installed using the optional 3 wire power cable, the system will start up when the ignition key is turned ON. No user intervention is required.

3.2 Shutting the iNEX Down

As with starting up, the iNEX may be shut down with either the power button, or the vehicle ignition key.

3.2.1 Using the iNEX Power Button

Press and hold the iNEX Display power button until one beep is heard.

The iNEX will display a shutdown progress screen while it is saving data and settings. At the completion of this process, power will be removed from the system.

3.2.2 Using the Vehicle Ignition

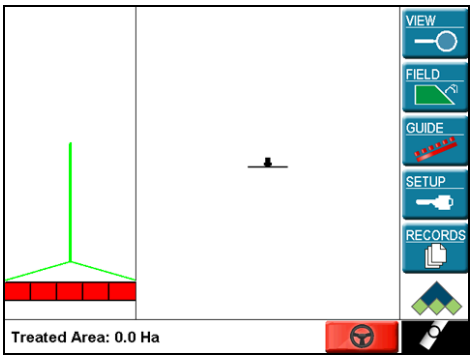
If the iNEX has been correctly installed using the optional 3 wire power cable, the system will shut down when the ignition key is turned OFF. No user intervention is required.

Note: Do not turn the iNEX off by disconnecting cables. Shutting down the system in this way may cause the loss of important information.

Note: If the iNEX does not respond to either the ignition switch or pressing the power button to shut down, the user may choose to force a shut down. Press and hold the power button for approximately five seconds, after which time the system will emit three beeps. Release the power button and the system will turn off. Forcing a shut down should only be used as a last resort, as data and settings may be lost as a result. If you regularly need to force a shutdown to turn the iNEX off, it is recommended that you contact the point of purchase to correct the source of the problem.

3.3 Screen Layout

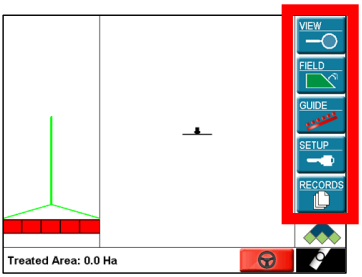
After starting the iNEX it will be ready for use when the main screen is displayed as shown.



During normal operation the iNEX Display is divided into several distinct parts. These parts are described in the following pages.

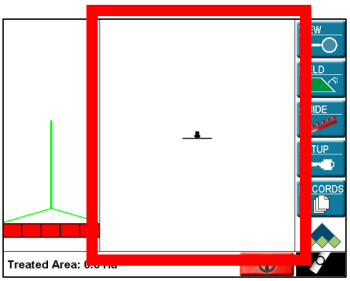
3.3.1 Menu Buttons

The Menu Buttons are the main controls for the operator. Pressing the buttons will cause another menu to appear or an action to occur (such as starting Guidance). Here the Main menu is pictured.

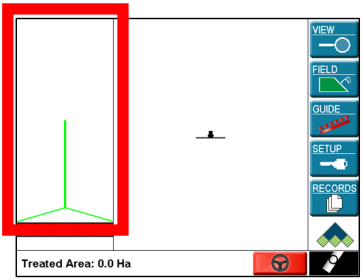


3.3.2 Map Screen

The Map Screen occupies the greater part of the overall screen and displays the treated area as a map view. During operation the current GPS position will be shown as a vehicle icon.

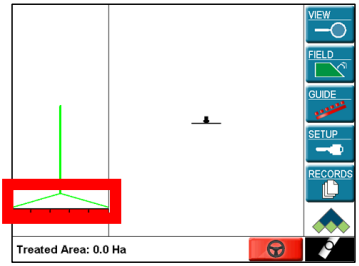


3.3.3 Virtual Road Window



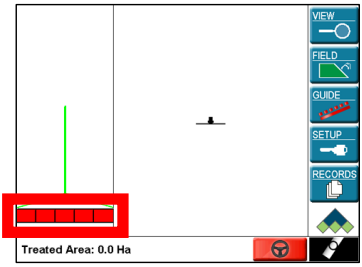
The Virtual Road Window is used to display a perspective view of the path ahead which is to be followed. If there is no Guidance active then the window will be blank. If the system has been activated for Advanced Data Records then the Virtual Road Window will show information about the current treatment when Guidance is not active or the vehicle is stationary.

3.3.4 Master Switch Status



The Master Switch Status is the green triangle at the bottom of the Virtual Road Window. When the master switch is OFF the triangle will be shown as a green outline and equally when the master switch is ON the triangle will be shown in solid green. When the Master Switch source is configured as Touch, pressing the triangle will activate / deactivate the master switch .

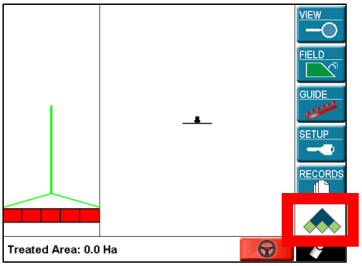
3.3.5 Boom Section Status



The Boom Section Status displays the number of sections configured and the current state of the section, being ON (red) or OFF (white). In the event that any section has an active AutoSPRAY override the section will be shown with a cross though it.

3.3.6 AutoSPRAY Status

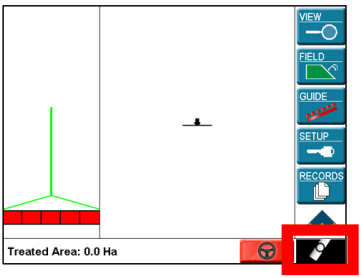
The AutoSPRAY Status Button will only be shown if AutoSPRAY has been enabled on the iNEX. When it is displayed it will be shown in one of four colours. Green represents AutoSPRAY as ON and functioning normally; Orange when AutoSPRAY override is functioning; White when AutoSPRAY is OFF and Grey when there is an AutoSPRAY error.



Pressing on the AutoSPRAY Status Button will turn the AutoSPRAY ON/OFF and can be used to temporarily suspend AutoSPRAY control. Holding the AutoSPRAY Status Button down for four seconds will provide access to the AutoSPRAY override menu.

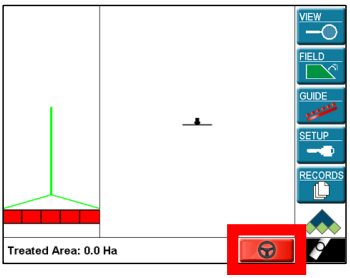
3.3.7 GPS Status

The GPS Status displays the health of the GPS position information. When the system is operating normally a continually scrolling satellite will be displayed. Touching on this area will display a screen with more detailed information about the GPS Status. Other display states are described in section 3.6.1 Checking the GPS Status



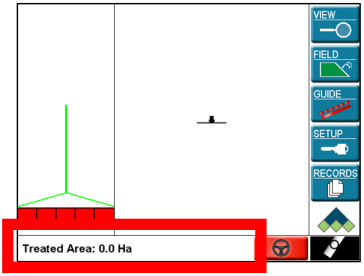
3.3.8 AutoSTEER Status

The AutoSTEER Status is displayed when AutoSTEER has been enabled and setup on the iNEX. It displays the readiness of the steering system to engage or when the steering is engaged. Pressing the button will engage & disengage steering when at the appropriate readiness level. Holding the button down for four seconds will provide access to more advanced functions.



3.3.9 Status Bar

The Status Bar displays information about the current treatment and connected devices. From time to time important messages will flash in red on the Status Bar to alert the operator of a particular condition. The operator can touch on the Status Bar to scroll through the available information.



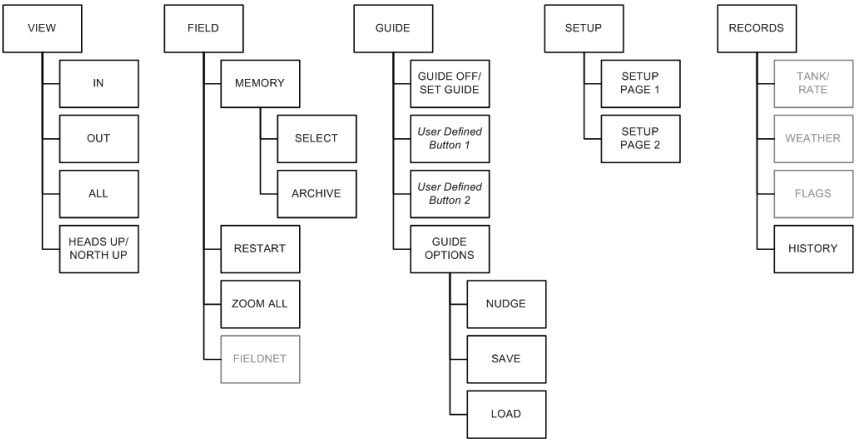
Note: The Main Screen may vary dependant upon the options configured on the system.

Note: Pressing on the Status Bar will advance the display to the next Status Message. Which Status Messages are to be displayed can be configured in Display Setup.

Note: The iNEX Display has a touch sensitive screen, which means that the system is operated by touching the buttons on the screen. The user should touch the button on the screen with only their finger to select the button.

WARNING: Under no circumstances should any sharp implement be used to touch the screen nor excessive force be used when touching the screen.

3.4 Basic Menu Layout



The iNEX is operated and configured by a menu system. The menus are accessed by touching the appropriate part of the screen.

Touching any one of the menu buttons will either activate the function associated with the button or lead to a sub-menu. A sub-menu is similar to the main menu whereby touching the button may either activate a function or lead to a further sub-menu.

This manual refers to the Main menu as that which is shown when the system is first started.

A useful rule of thumb is that if the menu does not show a BACK button then the system is at the Main menu.

One of the integral philosophies of the iNEX is that regardless of the software options purchased the menu system should be essentially the same. This is to ensure that as users' requirements are expanded there is a common structure and immediate recognition of the menu layout.

Consequently some of the buttons will have no effect in particular configurations. In these cases the button colour is grey indicating to the user that the button is not available or has no effect.

3.5 Creating A Basic Vehicle

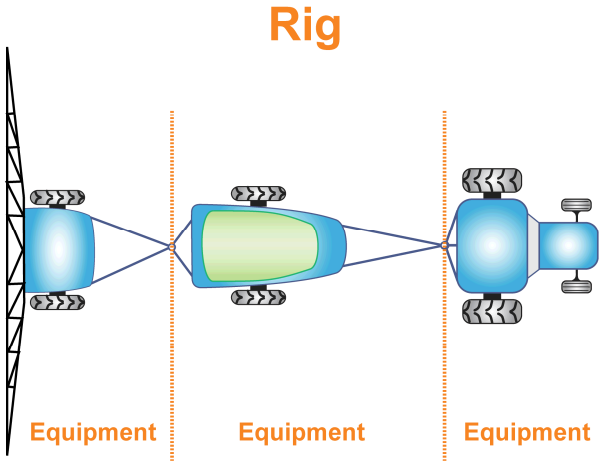
The iNEX incorporates advanced vehicle modelling software to ensure that the recorded treatment areas are truly correct. It is particularly relevant as automatic control of treatment application is adopted.

The iNEX can accurately model a self propelled vehicle or any implement which is towed by a vehicle. In order to perform these calculations it is imperative that the measurements of the vehicle and GPS antenna are accurately recorded.

The iNEX uses specific terminology to describe the parts of plant and equipment which make up a complete vehicle which is used on the farm.

Equipment: Each implement or item of plant and equipment is a different **equipment** item (a tractor, truck, tank and boom are all individual **equipment** items).

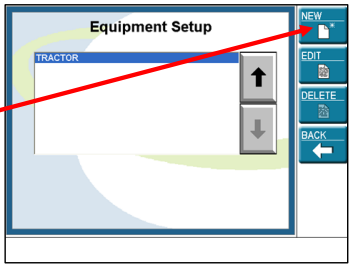
Rig: Each rig is made up of one or more equipment items selected from a list, up to a maximum of five. This concept is illustrated below which shows three pieces of equipment to assemble one rig.



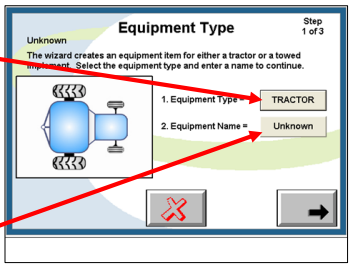
3.5.1 Define Vehicle Offsets

Each piece of equipment in the rig will need to be defined separately so that treatments can be accurately recorded. The first equipment item in the Rig will be a tractor, articulated tractor, self propelled sprayer, truck, combine harvester, etc. With the exception of the articulated tractor the method for measuring the listed vehicles are the same and are covered by the TRACTOR setting in the Equipment Wizard.

1. From the Main menu press **SETUP**.
2. Press **VEHICLE SETUP**.
3. Press **EQUIPMENT SETUP**.
4. Press **NEW**.



5. Select the Equipment Type by repeatedly pressing the Equipment Type button. If unsure of which equipment type would best suit your vehicle check the examples in Appendix 15.1 Equipment Measurement Examples.



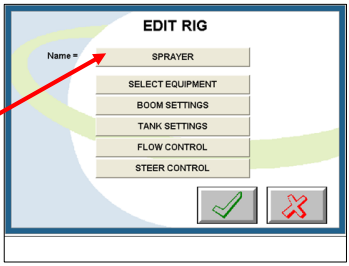
6. Press **EQUIPMENT NAME**, enter a Name for the equipment item e.g. "Big Tractor", press **TICK** followed by **➔**.
7. Accurately enter the required Physical Measurement and press **➔**.
8. Enter the approximate measurements as shown by the wizard and press **TICK**. These measurements are only used to generate the vehicle icon on the screen and hence can be approximate values.
9. Repeat these steps for each equipment item that makes up the Rig.

Note: See Appendix 15.1 Equipment Measurement Examples for examples of how to measure other vehicles such as Self Propelled Sprayer with front mounted Boom, etc.

3.5.2 Define Rig Details

The Rig comprises one or more equipment items. The Rig also defines the boom or swath width, the tank capacity, the flow controller and steering controller used in the makeup of the Rig. The first step is to create a Rig and give it a name.

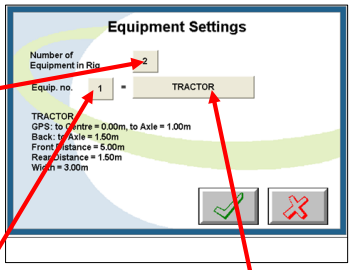
1. From the Main menu press **SETUP**.
2. Press **VEHICLE SETUP**.
3. Press **RIG SETUP**.
4. Press **NEW**.
5. Press the Rig Name button to enter a name for the rig e.g. "Main Spray Rig".



3.5.2.1 Combining Vehicles to Create A Rig

By combining the equipment items to form a Rig the iNEX can accurately model the movements of the vehicle and the treatment being applied.

1. Press **SELECT EQUIPMENT**.
2. Define the number of equipment items in the Rig by pressing the Number of Equipment in Rig button. Press ↑ ↓ to set the number of equipment items then press **TICK**.
3. Select which piece of equipment to define by touching on the Equip. no. button until the desired equipment item number is shown.



4. Press the Equipment Name button to select the previously defined Equipment item.
5. Press **TICK** when all Equipment items in the Rig have been selected.

Note: The iNEX will only allow a TRACTOR to be added as the first equipment item in a Rig while subsequent equipment items must be IMPLEMENTS.

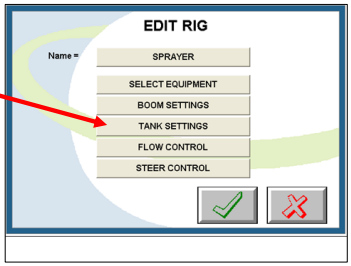
3.5.2.2 Configure Advanced Settings

Depending on the options which have been purchased with the iNEX the Tank Size, Flow Controller or Steer Controller settings may be available and need to be configured. If the relevant setting button in the Rig is disabled then the option has not been enabled or is locked to a particular setting.

Tank

The Tank Size is available when Advanced Data Records has been enabled. It is used in the Tank Manager to determine the maximum size of the tank on the rig and hence how much product needs to be loaded or mixed when completely filling the tank.

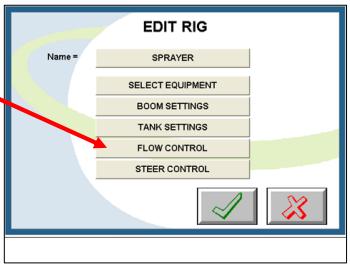
1. On the Edit Rig screen (see 3.5.2 Define Rig Details) press **TANK SETTINGS**.
2. Press on the Tank Size value button and enter the new value.
3. Press **TICK**.



Flow Control

The Flow Controller should be configured when a direct cable connection via Serial or CANbus has been installed. The features available for any given flow controller varies and will be dependant on the capabilities of the particular flow controller.

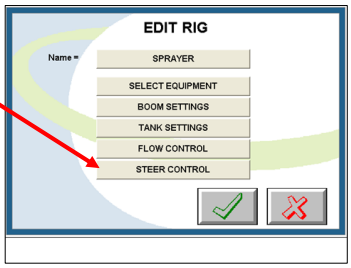
1. On the Edit Rig screen (see 3.5.2 Define Rig Details) press **FLOW CONTROL**.
2. Press the Flow Controller name button.
3. Select the desired flow controller from the list and press **ACCEPT**.
4. Press **TICK**.



Steer Control

When the iNEX has the AutoSTEER option enabled the Steer Controller will either be pre-selected or the operator will be able to pick from a number of different steering controllers.

1. On the Edit Rig screen (see 3.5.2 Define Rig Details) press **STEER CONTROL**.
2. Press the Steer Controller name button.
3. Select the desired Steering Controller from the list and press **ACCEPT**.
4. Press **TICK**.



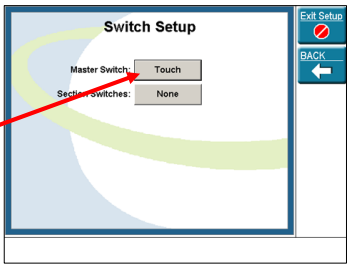
3.5.3 Master & Section Switch Detection

To determine when to record treatment the iNEX has a Master Switch and Section Switches. These switches can be triggered by touching the screen or sensing the state from external hardware.

3.5.3.1 Master Switch

By default the system will be configured for the master switch to be triggered by touching on the Master Switch Status on the screen. Depending on the options purchased and the attached hardware there are a number of different options for detecting the master switch state from existing equipment; these include Touch, Sense, Sense Dipole and Flow Controller.

1. From the Main menu press **SETUP**.
2. Press **VEHICLE SETUP**.
3. Press **SWITCH SETUP**.
4. Touch on the Master Switch button until the required setting is displayed.



Touch When set to Touch the master switch can be turned ON and OFF by touching on the Master Switch Status in the Virtual Road Window. Optionally the master switch can also be turned ON and OFF by pressing a Remote Button configured for Rove/Record (see section 7.5 Configuring Remote Buttons).

Sense The master switch is turned ON when voltage is applied to the master switch Input pin and turned OFF when voltage is removed. Using this method will allow the system to detect an existing master switch in the vehicle. For more information see section 2.5 Connecting Remote Master Switch.

Sense Dipole Similar to Sense the Sense Dipole setting can be used to sense an existing master switch in a vehicle. In this case Sense Dipole will sense a switch which operates by reversing the polarity.

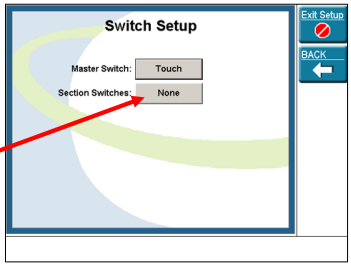
To use the Sense Dipole option an AS310 is required. For more information see the iNEX Installation Manual.

Flow Controller When the Flow Controller setting is used the system will detect the Master Switch Status from the selected flow controller. To use this option a flow controller must be selected for the current Rig (see section 3.5.2.2 Configure Advanced Settings).

For some controllers it is not possible to use the Flow Controller setting when AutoSPRAY is ON. If this is the case then the master switch will not be detected until the Master Switch Setup is changed or AutoSPRAY is turned OFF.

3.5.3.2 Section Switches

1. From the Main menu press **SETUP**.
2. Press **VEHICLE SETUP**.
3. Press **SWITCH SETUP**.
4. Touch on the Section Switches button until the required setting is displayed.



None By default the Section Switches are configured to None. When configured as None all of the sections will be set to ON causing the treatment to always be recorded as a full swath width.

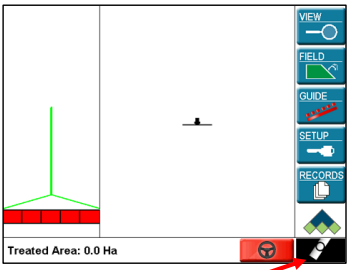
External When configured for External the Section state will be updated from a compatible flow controller if selected or by sensing the voltage on the AutoSPRAY Voltage port if connected.

AutoSPRAY The system will automatically configure the Section Switches to AutoSPRAY when AutoSPRAY is enabled and turned ON. This will allow the iNEX to automatically control the state of the sections.

3.6 Treating A Field

3.6.1 Checking the GPS Status

After starting, but before commencing work, the system will require good GPS position information. The GPS Status is a quick indicator of the quality of the GPS position.



The system is ready for operation when a scrolling satellite is displayed. The colour of the satellite indicates the type of correction the attached GPS receiver is using.

If there is a problem with the GPS receiver the scrolling satellite will be replaced with either a blank square or an alert icon.

Pressing on the GPS Status will display a screen with more information from the GPS receiver such as status, speed, and direction.

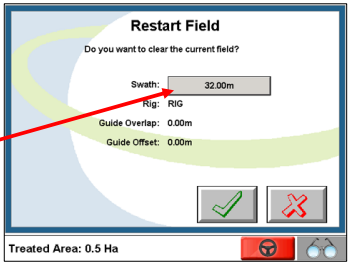
GPS Status	Description	Example
	High Accuracy GPS (Green Scrolling Satellite)	OmniSTAR XP, OmniSTAR HP, RTK
	Sub Metre GPS (White Scrolling Satellite)	OmniSTAR VBS, Marine Beacon, WAAS
	GPS Only (Red Scrolling Satellite)	No correction used
	GPS Error (Alert Icon)	Receiver Initialising, Too Few Satellites
	No Data (Blank Box)	Cable disconnected, Receiver not powered
	View Mode (Glasses)	In Field Menu, user can touch the screen to zoom in on an area

3.6.2 Starting A New Field

When the iNEX is started it will load the last treatment used when the system was shut down.

When starting a new field the current field should be cleared to ensure it is ready for the new information.

1. From the Main Menu press **FIELD**.
2. Press **RESTART**.
3. If the current vehicle is configured with only one section then the overall width of the vehicle can be set on the Restart Field screen by touching on the Swath value.
4. Press **TICK**.

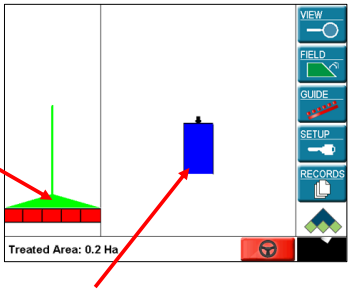


In the event there is previous treatment in the memory slot it will be cleared from the screen and the new vehicle swath width will be configured.

3.6.3 Recording Treatment

By default the iNEX will be setup to record treatment when the Master Switch Status is pressed. There are a number of different options which can be used to detect or trigger the master switch, see section 3.5.3 Master & Section Switch Detection.

If the system has not been configured for a different master switch source simply touching the Master Switch Status will cause the green outlined triangle to become solid green. This indicates the master switch is ON, which more importantly will cause the system to record treatment on the Map screen.



When the vehicle is moving a blue treatment swath will be left on the screen while the master switch is ON. Turning the master switch OFF will cause the system to stop recording the treatment.

3.6.4 Following A Guideline

With the field now cleared and understanding how to turn the treatment recording ON and OFF the next step is to set a guideline to follow.

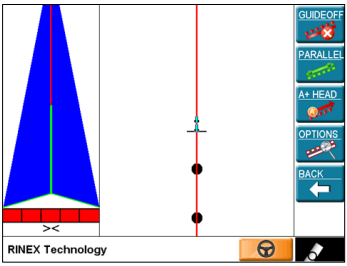
This example demonstrates how to set a parallel line and follow the associated Guidance.

The iNEX can be configured for several different types of Guidance. By default the system is setup to display Parallel and A+ Heading Guidance on the Guide menu. The following steps assume the defaults have not been changed. See section 4.2 Selecting Active Guidance Types for steps on changing the Guidance types displayed on the Guide menu.

1. Position the vehicle along a fence line or at the start of a row.
2. From the Main menu press the **GUIDE** button.
3. Press the **PARALLEL** button. A large black dot will be marked at the position of the vehicle on the Map screen.
4. Drive the vehicle to the other end of the field or row. No Guidance will be provided as the line has not yet been defined.
5. Press the **PARALLEL** button. Another large black dot will be marked at the position of the vehicle on the Map screen.
6. Press the **PARALLEL** button a third time to activate the guideline.
7. To follow the next line simply turn the vehicle around and the system will automatically jump to the next line or the nearest available parallel line.

On the Map screen a red line will pass though the two waypoints shown as large black dots.

The Virtual Road Window will display a wide blue path with a red centre line. The blue path represents the road with the red line representing the centre of the road and the guideline – the optimum path to follow.



Note: The Guide menu can be customised to display the two most frequently used Guidance types in place of the Parallel and A+ Heading buttons if required. See section 4.2 Selecting Active Guidance Types for more information.

Note: To ensure accuracy of the system, enter the vehicle measurements as outlined in section 3.5.1 Define Vehicle Offsets

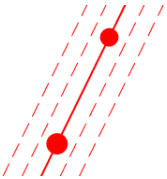
4 Guidance

4.1 Different Types Of Guidance Available

A major feature of iNEX is the ability to provide guidance to the operator so that treatment can be applied to a field as accurately as possible. In order to treat an entire field the operator will want to ensure that no areas are missed and minimise overlapping areas. Due to the never-ending shapes of fields a number of different Guidance types have been developed.

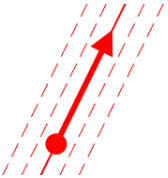
Parallel

Perfectly straight lines parallel to each other separated by the defined vehicle swath width. A parallel line is defined by marking two points in the field.



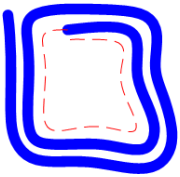
A+ Heading

A+ Heading is the same as Parallel but is defined by marking one point in the field and entering a compass bearing.



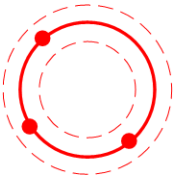
Adaptive

Adaptive Guidance will provide guidance alongside any previously treated swath to display a guideline.



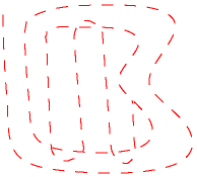
Pivot

Concentric circles with a common centre point. Each circle is separated by the defined vehicle swath width. A pivot guideline is defined by marking three points.



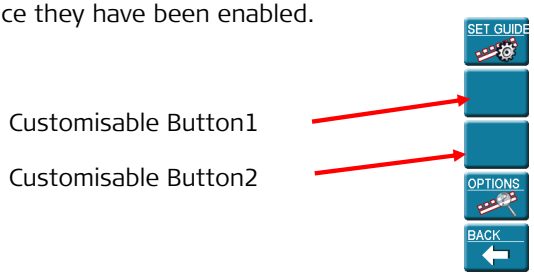
RePLAY

RePLAY will provide guidance along the path of a previous treatment. After loading an archived treatment as a RePLAY file, guidance will be provided along the nearest previous path.



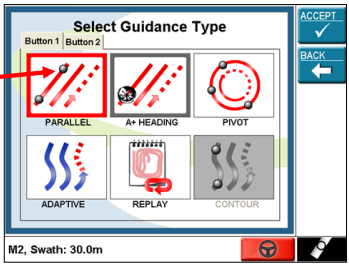
4.2 Selecting Active Guidance Types

The Guidance types which appear on the Guide menu are customisable by the operator and can be set to any one of the six different Guidance types once they have been enabled.



By default Button1 will be set to Parallel and Button2 will be set to A+ Heading. These are easily changed while Guidance is off from within the Guide menu.

1. From the Main menu press **GUIDE**.
2. Ensure Guidance is OFF. If required press the **GUIDE OFF** button.
3. Press **SET GUIDE**.
4. Select the desired Guidance type to be on Button1.
5. Press the BUTTON2 tab.
6. Select the desired Guidance type to be on Button2.
7. Press **ACCEPT**.



Note: On the Select Guidance Type screen the currently selected Guidance type for the given button is shown with a thick RED boarder. The selected Guidance for the other button is shown with a thick GREY boarder.

Note: Any Guidance type which has not been enabled on the iNEX is shown in grey and cannot be selected.

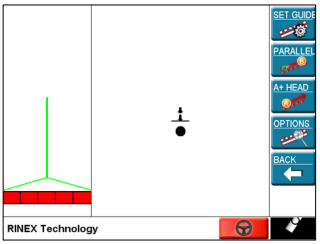
4.3 Using Guidance

4.3.1 Using Parallel Guidance

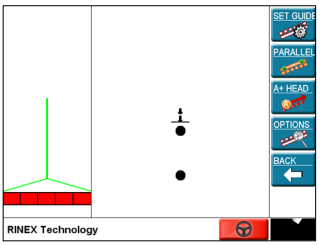
By default Parallel Guidance will be selected as one of the Active Guidance Types and is available on the Guide menu. See section 4.2 Selecting Active Guidance Types.

1. From the Main menu press **GUIDE**.

2. Drive to the start point of the line and press **PARALLEL**.
   A large black dot is marked on the screen to indicate the A Point.

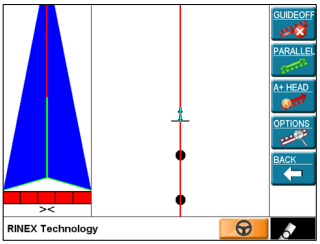


3. Drive to the end point of the line and press **PARALLEL**.
   Another large black dot is marked on the screen indicating the B Point.



4. Press **PARALLEL** a third time to activate Guidance.
   The Map Screen shows a red line which passes though the A & B Points.
   The Virtual Road Window shows the path to be followed by the operator.

5. To continue on another Parallel pass simply turn the vehicle around and the system will jump to the nearest guideline.



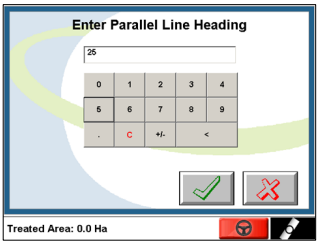
Note: The A and B Points must be at least 30m apart. It is recommended but not essential to space these points as far apart as possible to reduce any error in the key guideline.

Note: A new Parallel guideline can be created by pressing the PARALLEL button when Parallel Guidance is active.

4.3.2 Using A+ Heading Guidance

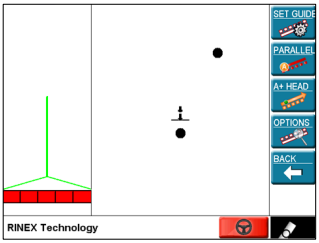
By default A+ Heading Guidance will be selected as one of the Active Guidance Types and is available on the Guide menu. See section 4.2 Selecting Active Guidance Types.

1. From the Main menu press **GUIDE**.

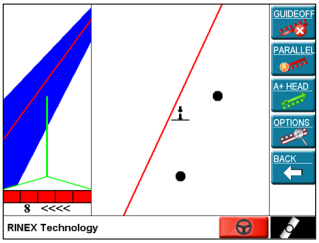


2. Drive to the start point of the line and press **A+ HEAD**. Enter the desired Heading for the guideline and press **TICK**.

3. Two large black dots are shown on the Map Screen which represent the A Point and the direction in which the guideline will be created.



4. Press **A+ HEAD** a second time to activate the guideline**.**
   The Map Screen shows a red line which passes though the two points.
   The Virtual Road Window shows the path to be followed by the operator.



5. To continue on another A+ Heading pass turn the vehicle around and the system will automatically jump to the nearest guideline.

Note: The Heading value is measured as Decimal Degrees from True North and can be entered to an accuracy of three decimal points.

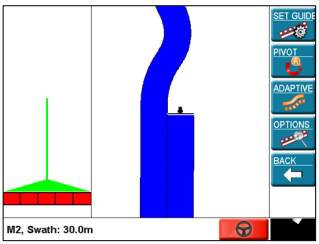
Note: A new A+ Heading guideline can be created by pressing the A+ HEAD button when A+ Heading Guidance is active. The operator will be warned before the existing line is replaced.

4.3.3 Using Adaptive Guidance

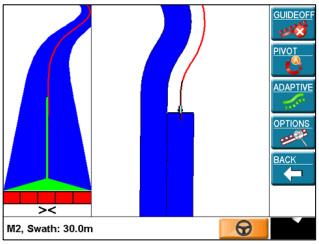
Adaptive Guidance will lock onto any previously treated area to display a guideline. For Adaptive Guidance to work treatment needs to be recorded in the field before Adaptive Guidance can be displayed.

Adaptive Guidance by default is not selected as one of the active Guidance forms and as such must be selected before it will appear on the Guide menu. See section 4.2 Selecting Active Guidance Types.

1. Record treatment, typically along a fence line or field boundary.
2. From the Main menu press **GUIDE**.



3. Drive to along side a treated area and press **ADAPTIVE**.
   When the vehicle is in close range of any previous treatment, a red guideline following one swath width from the treatment is shown on the Map Screen. The Virtual Road Window shows the path to be followed by the operator.



Note: The ADAPTIVE button can be pressed at any time to put the system into ADAPTIVE Guidance mode.

Note: If there is no treatment for Guidance to lock onto, no Guidance will be displayed but Adaptive Guidance will remain active and will automatically start displaying Guidance when the vehicle comes within range of a previous treatment area.

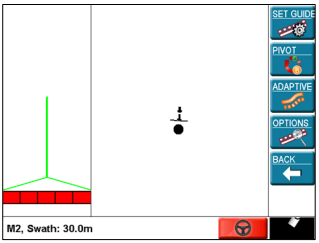
Note: If the operator unexpectedly changes direction, such as turning around, then the Guidance will automatically update to the new direction. The operator does not need to perform any action.

Note: When faced with treatment on both sides of the vehicle, Adaptive Guidance will create a guideline one swath away from only one of the treatment areas. Which treatment area is chosen to create the guideline can be configured by the operator. See 4.4.3 Defining the Adaptive Guidance Direction.

4.3.4 Using Pivot Guidance

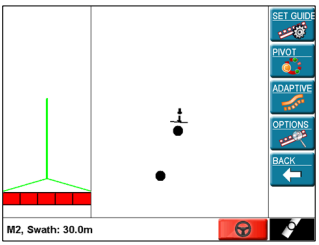
Pivot Guidance is an optional feature and must be enabled before it can be selected and used. Once enabled Pivot Guidance can be set as an Active Guidance Type and will appear on the Guide menu. See section 4.2 Selecting Active Guidance Types.

1. From the Main menu press **GUIDE**.

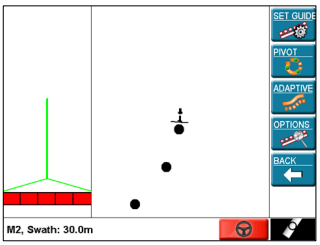


2. Drive to the start point of the circle, such as an irrigator wheel track and press **PIVOT**.
   A large black dot is marked on the screen to indicate the A Point.

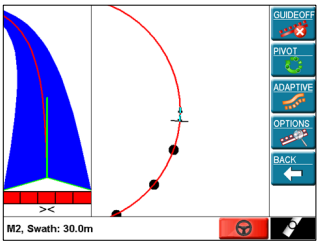
3. Drive partially around the circle and press **PIVOT**.
   Another large black dot is marked on the screen indicating the B Point.



4. Drive further around the circle and press **PIVOT**.
   Another large black dot is marked on the screen indicating the C Point.
   The Pivot button changes to show three points for the line have been recorded, but Guidance is not active.



5. Press **PIVOT** a fourth time to activate Guidance.
   The Map Screen shows a red circle which passes though the A, B & C Points.
   The Virtual Road Window shows the path to be followed by the operator.



6. To continue on another concentric Pivot circle drive to the next pass and the system will automatically jump to the nearest guideline.

Note: The A, B and C Points must be at least 30m apart, it is recommended but not essential to space these points as evenly around the circle as possible to maximise accuracy in the key guideline.

Note: A new Pivot guideline can be created by pressing the PIVOT button when Pivot Guidance is active. The operator will be warned before the existing line is replaced.

Note: The operator will be warned and prevented from defining a C point if the radius of the circle created by A, B & C points is too large or in a straight line.

4.3.5 Using RePLAY Guidance

RePLAY will provide Guidance along the path of a previous treatment. After loading an archived treatment as a RePLAY file, Guidance will be provided along the nearest previous path.

RePLAY Guidance is an optional feature and must be enabled before it can be selected and used. Once enabled RePLAY Guidance can se set as an Active Guidance Type and will appear on the Guide menu. See section 4.2 Selecting Active Guidance Types.

4.3.5.1 Generating a RePLAY File

Before a RePLAY file can be created a treatment must have been completed and Archived. See section 5.2.2 Archiving a Field.

1. From the Main menu press **RECORDS**.
2. Press **HISTORY**.
3. Select a treatment from the list and press **DETAILS**.
4. Press **EDIT**.
5. Press **CREATE REPLAY FILE**.

4.3.5.2 Loading a RePLAY File

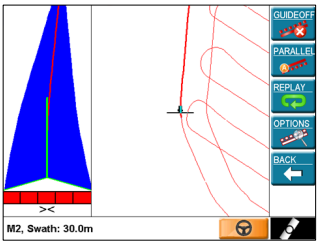
Loading a RePLAY file is the same process as loading any other saved guideline. Before trying to load the guideline RePLAY must be selected as an Active Guidance Type (see section 4.2 Selecting Active Guidance Types).

1. From the Main menu press **GUIDE**.
2. Press **OPTIONS**.
3. Press **LOAD**.
4. Select the RePLAY File to load and press **LOAD**.

4.3.5.3 Activating RePLAY Guidance

Once a RePLAY file has been loaded it is a simple process to activate RePLAY Guidance and follow the guideline.

1. Press **REPLAY**.
   A red guideline is shown on the Map Screen. This line follows the path of the treatment the RePLAY file was created from.
   The Virtual Road Window shows the path to be followed by the operator.



2. To follow the guideline simply drive to any track and the Guidance automatically jumps to that guideline. No other action is required by the operator.

Note: Before a RePLAY file can be created, a treatment must be completed and archived. See 5.2.2 Archiving a Field.

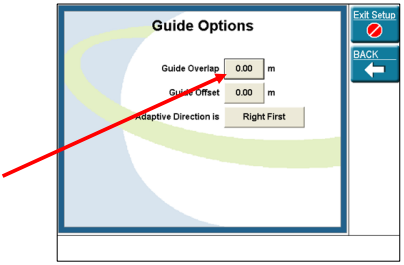
Note: If no path is displayed on the screen after activating RePLAY, check that the RePLAY path loaded is for the current vehicle location – no path will be displayed if the vehicle is too far from the path.

4.4 Configuring Guidance Options

4.4.1 Defining A Guide Overlap

Normally the guidelines will be created at even swath widths apart at the distance specified by the operator. In some situations it may be desirable to intentionally over lap the treatment to ensure there are no misses in the field. Defining a Guide Overlap will allow the system to automatically reduce the spacing of the guideline by the amount entered without affecting the treatment width.

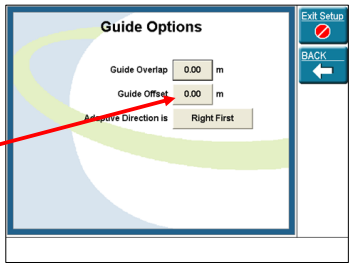
1. From the Main menu press **SETUP**.
2. Press **MORE**.
3. Press **GUIDE OPTIONS**.
4. Press the Guide Overlap value button.
5. Enter the desired amount and press **TICK**.



4.4.2 Defining A Guide Offset

A Guide Offset is typically used in inter-row and tramline cropping situations where it is desirable to use a previously saved Parallel or A+ Heading line but a small offset left or right of the line is required. Defining a guide offset adjusts all Parallel and A+ Heading lines by the amount entered until reset to zero by the operator.

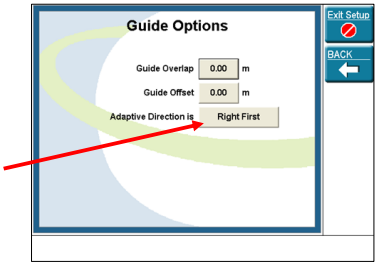
1. From the Main menu press **SETUP**.
2. Press **MORE**.
3. Press **GUIDE OPTIONS**.
4. Press the Guide Offset value button.
5. Enter the desired amount and press **TICK**.



4.4.3 Defining the Adaptive Guidance Direction

Adaptive Guidance will lock onto any previously treated area to display a guideline. When faced with treatment on both sides of the vehicle, Adaptive Guidance will create a guideline an even swath away from only one of the treatment areas. The Adaptive Direction setting is used to determine which treatment will be used to create the Adaptive guideline.

1. From the Main menu press **SETUP**.
2. Press **MORE**.
3. Press **GUIDE OPTIONS**.
4. Press **ADATIVE DIRECTION** repeatedly until the desired setting is displayed.



Right First searches for a previous treatment swath on the right first. If no previous treatment swath is found, the left is searched. This setting is typically used when usually travelling anti-clockwise around a paddock and sometimes changing direction.

Left First searches for a previous treatment swath on the left first. If no previous treatment swath is found, the right is searched. This setting is typically used when usually travelling clockwise around a paddock and sometimes changing direction.

Right Only searches **only** to the right for a previous treatment swath. This setting is typically used when only travelling anti-clockwise around a paddock and never changing direction.

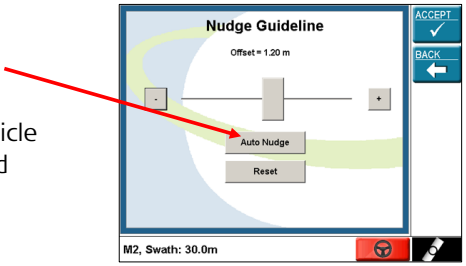
Left Only searches only to the left for a previous treatment swath. This setting is typically used when only travelling clockwise around a paddock and never changing direction.

4.4.4 Adjusting the Guideline for GPS Drift

Depending on the specific hardware configuration for the iNEX from time to time it may be necessary to adjust a guideline to compensate for drift in the GPS position. This is particularly evident when using lower quality GPS receivers, returning to a field and using guidelines several hours after they were created.

The guideline can be adjusted by a specific amount or the amount to shift the line can be automatically calculated.

1. From the Main menu press **GUIDE**.
2. If Guidance is not active, press the required Guidance button to start the relevant Guidance and position the vehicle on top of a previous pass in the field.
3. Press **OPTIONS**.
4. Press **NUDGE**.
5. Press **AUTO NUDGE**.
   The distance between the guideline and the current vehicle position will be calculated and displayed as the offset.
6. Press **ACCEPT**.



Note: Parallel and A+ Heading are the only guidelines which can be adjusted using the Nudge feature.

Note: The amount to nudge the guideline can be manually entered on the Nudge Guideline screen by dragging the slider bar or pressing the plus and minus buttons.

Note: Pressing BACK on the Nudge Guideline screen will cancel adjusting the guideline.

4.5 Save & Load Guidelines

4.5.1 Saving a Guideline

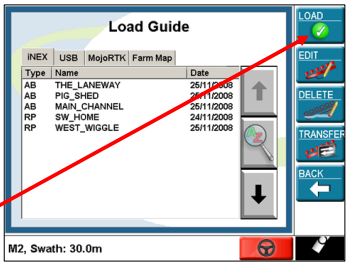
Parallel, A+ Heading, Pivot, and Contour guidelines can all be saved to the iNEX memory and easily transferred to another system or recalled at a later time.

1. From the Main menu press **GUIDE**.
2. The guideline to be saved should be the current active guideline. If required activate the guideline by pressing the relevant Guidance button.
3. Press **OPTIONS**.
4. Press **SAVE**.
5. Enter a name for the guideline and press **TICK**.

4.5.2 Loading a Guideline

To load a guideline the same Guidance type should first be selected as an Active Guidance Type. See section 4.2 Selecting Active Guidance Types.

1. From the Main menu press **GUIDE**.
2. Press **OPTIONS**.
3. Press **LOAD**.
4. Select the guideline to be loaded from the list and press **LOAD**.

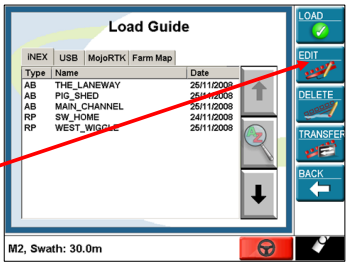


5. A guideline saved to another device such as a USB memory stick or the mojoRTK console can also be loaded in the same way by first pressing on the relevant Tab to select the source device.

4.5.3 Renaming a Guideline

Any guideline saved on the iNEX memory or a USB memory stick can easily be renamed when required from the Load Guideline screen.

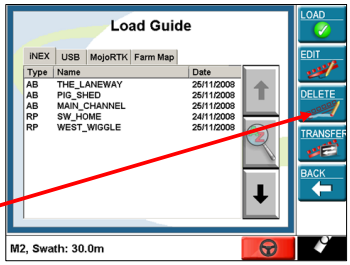
1. From the Main menu press **GUIDE**.
2. Press **OPTIONS**.
3. Press **LOAD**.
4. Select the guideline to be renamed and press **EDIT**.
5. Enter a new name and press **TICK**.



4.5.4 Deleting a Guideline

Unwanted guidelines can easily be deleted by simply selecting the guideline and pressing the **DELETE** button.

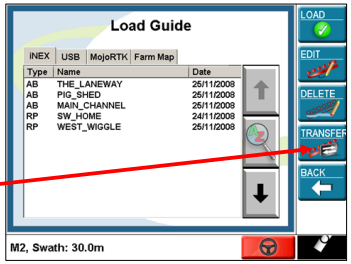
1. From the Main menu press **GUIDE**.
2. Press **OPTIONS**.
3. Press **LOAD**.
4. Select the guideline to be deleted and press **DELETE**.

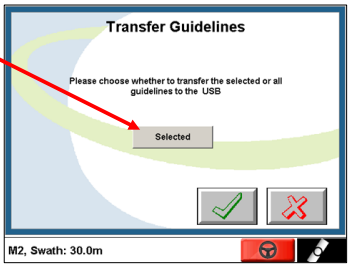


4.5.5 Transferring Guidelines

Operators who use multiple iNEX systems may need to transfer guidelines between systems and others may wish to backup important guidelines to a PC. This is a straightforward process which will work with most USB memory sticks.

1. Insert a USB memory stick in the USB port on the side of the iNEX.
2. From the Main menu press **GUIDE**.
3. Press **OPTIONS**.
4. Press **LOAD**.
5. To transfer one specific guideline, first select it from the list then press **TRANSFER**. There is no need to select a guideline first if transferring all lines.
6. Choose to either transfer Selected or All guidelines by pressing on the relevant button until the required setting is displayed.
7. Press **TICK** to transfer guidelines.





Note: If the iNEX Tab is selected when TRANSFER is pressed the guidelines will be copied to the USB Memory Sick.

Note: If the USB Tab or mojoRTK Tab is selected when TRANSFER is pressed the guidelines will be copied to the iNEX.

Note: The operator will be warned before overwriting any files if the destination contains any guidelines with the same name.

5 Field Memory

5.1 Field Memory

The iNEX has a temporary Field Memory which can store up to nine partially completed treatments. The system also has the ability to archive treatments from the temporary Field Memory to the permanent History. Fields saved to the History can be transferred to other systems, to the office PC or kept on the iNEX long term.

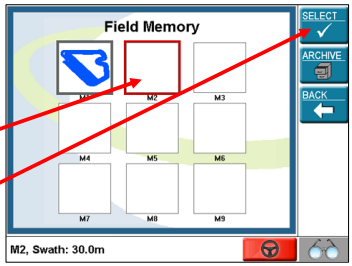
5.1.1 Suspending a Field for Later Use

During normal operation it may be desirable to keep a Field for later completion, while another field is to be treated. For this purpose the iNEX has a temporary Field Memory which can store up to nine partially completed fields.

The Field Memory can be thought of as nine separate memory slots. While the system is being used treatment is being stored in the current memory slot. Each memory slot is labelled M1 through to M9. By default the system stores treatment data in M1 until changed.

When a partially completed treatment is to be kept for later completion, simply change the current memory slot to suspend the treatment and start a new one.

1. From the Main menu press **FIELD**.
2. Press **MEMORY**.
3. Select new memory slot by pressing on the relevant square.
4. Press **SELECT**.



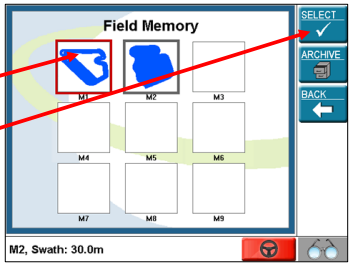
5. If old treatment information needs to be cleared to make way for a new treatment press **RESTART** & **TICK** on the Restart Field screen.

Note: When using Advanced Data Recording with AutoFIELD, or if the treatment has been archived and un-archived, then the Memory Slot will be labelled with the name of the field.

5.1.2 Loading a Suspended Field

When a treatment has been suspended to the Field Memory it is an equally simple process to reload this information so that work on the treatment can be completed.

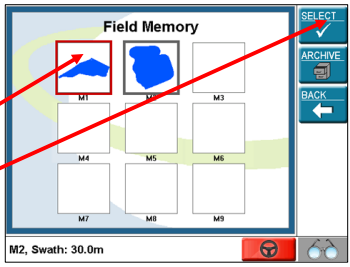
1. From the Main menu press **FIELD**.
2. Press **MEMORY**.
3. Select the memory slot with the partly completed treatment by pressing on the relevant square
4. Press **SELECT**.
5. Press **BACK**.

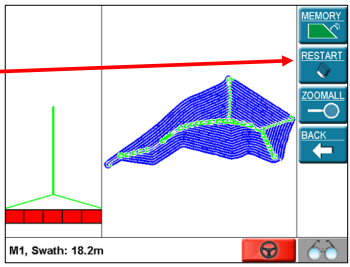


5.1.3 Clearing a Suspended Field

From time to time a field may be suspended but is no longer required. To clear a suspended field the memory slot must first be loaded then the treatment can be restarted.

1. From the Main menu press **FIELD**.
2. Press **MEMORY**.
3. Select the memory slot with the treatment to be cleared by pressing on the relevant square.
4. Press **SELECT**.
5. Press **RESTART** & **TICK**.





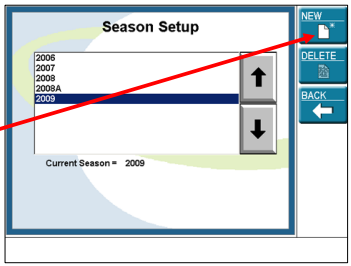
5.2 Field History

The Field History makes it possible for the operator to save treatment from the Field Memory to a file. This process, known as archiving a field, is useful if a treatment needs to be kept for farm records or is to transferred to another iNEX.

5.2.1 Creating a Season

To make sorting and managing archived fields easy the iNEX saves treatments within a seasonal structure. It is recommended that a new season is created with each new cropping season or on an annual basis. When a new season is created all partially completed fields should be Archived (see section 5.2.2 Archiving a Field) or cleared from the Field Memory.

1. From the Main menu press **SETUP**.
2. Press **MORE**.
3. Press **MEMORY SETUP**.
4. Press **SEASON**.
5. Press **NEW**.
6. Enter desired season designation and press **TICK**.

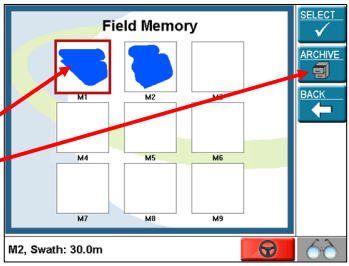


Note: To select a past season, press NEW and type in the season designation as listed (e.g., 2008A appears in the list, to select it type in 2008A and press TICK). The season will be selected and shown at the bottom of the Season Setup screen as the Current Season.

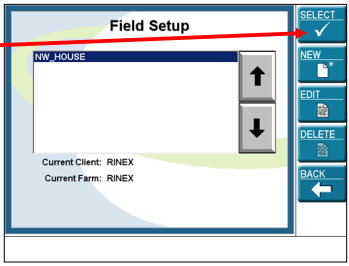
5.2.2 Archiving a Field

Archiving a field will save the treatment information from the selected memory slot in the Field Memory to a file which can be viewed in the Field History.

1. From the Main menu press **FIELD**.
2. Press **MEMORY**.
3. Select the memory slot to be archived by pressing on the relevant square.
4. Press **ARCHIVE**.



5. Select the field name from the list and press **SELECT**.



Note: When selecting the field name if it is not already in the list a new field name can be added by pressing the NEW button.

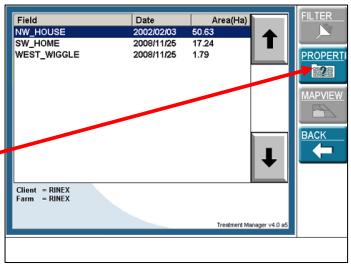
Note: When Advanced Data Records is enabled if a farm map has been created then the operator will not normally need to select the field name as AutoFIELD will detect which field the treatment belongs to.

Note: When Advanced Data Records is enabled the field will be stored under the Client & Farm selected in Current Job when the treatment was started.

5.2.3 Viewing Archived Field Information

Fields which have been archived are stored on the system and can be viewed in the Field History. More information about the treatment (such as the ability to view a map, a list of products used in the treatment, driver details, etc.) will be available if Advanced Data Records has been enabled.

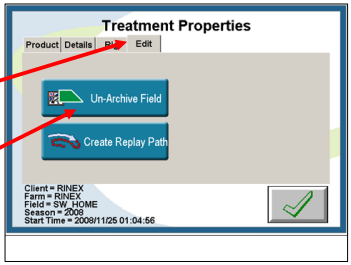
1. From the Main menu press **RECORDS**.
2. Press **HISTORY**.
3. Select the treatment from the list which is to be viewed and press **DETAILS**.



5.2.4 Un-Archiving a Field

It may be necessary to load a treatment from the Field History back into a memory slot in the Field Memory so that work can be reviewed or completed.

1. From the Main menu press **RECORDS**.
2. Press **HISTORY**.
3. Select the treatment from the list which is to be Un-Archived and press **DETAILS**.
4. Press **EDIT** tab.
5. Press **UN-ARCHIVE FIELD**.



Note: When a treatment is Un-Archived it is removed from the Field History. If this treatment is then cleared from the Field Memory it will be permanently deleted.

5.2.5 Exporting Archived Fields

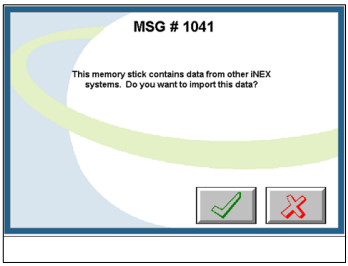
All Archived fields can be exported from the system and can be transferred to the office or another iNEX.

1. Insert a USB memory stick in the USB port on the side of the iNEX.
2. From the Main menu press **SETUP**.
3. Press **TRANSFER FILES**.
4. Press **EXPORT FILES**.

5.2.6 Importing Archived Fields

Fields which have been archived and exported from another iNEX can be imported using the same process as importing Advanced Data Records planning and field information from the office.

1. Insert a USB memory stick in the USB port on the side of the iNEX.
2. From the Main menu press **SETUP**.
3. Press **TRANSFER FILES**.
4. Press **IMPORT FILES**.
5. Provided there is data on the USB memory stick from another iNEX a message will be displayed asking if the data from another iNEX is to be imported. Press **OK**



5.2.7 Deleting Archived Fields

5.2.7.1 Delete a Single Field

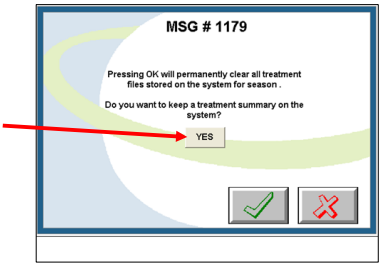
To delete a single field from the Field History it simply needs to be Un-Archived from the History. See section 5.2.4 Un-Archiving a Field.

Un-Archiving the field will load the treatment into a free memory slot in the Field Memory from which it can be cleared by restarting the required field. See section 5.1.3 Clearing a Suspended Field.

5.2.7.2 Delete a Whole Season

To free up large amounts of physical memory, entire seasons can be deleted. When deleting a whole season the operator is given an option to delete all information for the season or keep a summary. Choosing to keep a summary will retain the basic information about the treatment such as area treated, vehicle used, products used, driver details, etc but will clear the actual treatment data preventing the field being used to create a RePLAY file or being Un-Archived.

1. From the Main menu press **SETUP**.
2. Press **MORE**.
3. Press **MEMORY SETUP**.
4. Press **SEASON**.
5. Select the season from the list which is to be deleted and press **DELETE**.
6. Select if a summary is to be kept or not by pressing **YES**/**NO** until the desired answer is displayed then press **OK**.
7. Press **OK** again to confirm deletion of the season.



6 Advanced Data Records

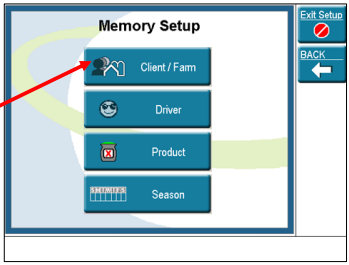
The Advanced Data Records option enhances the power of the iNEX by automatically managing treatment data. It does this by recognising the current field the vehicle is in via the AutoFIELD feature. This can then be used to check plans loaded in the Tank Manger are carried out in the correct location. Further features included in the Advanced Data Recoding option include Driver Security, Weather Recording and the option to store treatment records by Client and Farm Name.

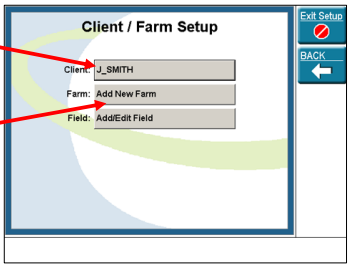
6.1 Adding a New Client & Farm

When the Advanced Data Recording option has been purchased the iNEX can store treatment records not only by Field name but also by Client and Farm name.

Client and Farm names can be created in the office using PlanIT or on the iNEX.

1. From the Main menu press **SETUP**.
2. Press **MORE**.
3. Press **MEMORY SETUP**.
4. Press **CLIENT / FARM**.
5. Press **CLIENT** and press **NEW** to enter a new Client name.
6. Select the Client for the Farm to be added by pressing on the name in the list then press **SELECT**.
7. Press **FARM** and press **NEW** to enter a new Farm name.

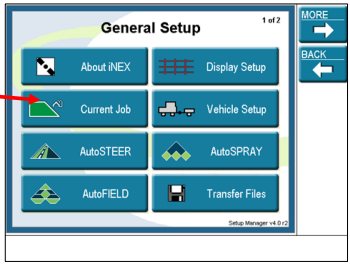




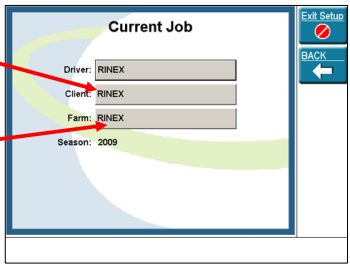
6.2 Selecting a Client & Farm

When using the iNEX with multiple Clients or Farms it is important that these be selected as the Current Job before commencing any other work.

1. From the Main menu press **SETUP**.
2. Press **CURRENT JOB**.



3. Press **CLIENT**.
4. Select the required Client name by pressing on it in the list then press **SELECT**.
5. Press **FARM**.
6. Select the required Farm name by pressing on it in the list then press **SELECT**.



6.3 AutoFIELD

AutoFIELD is automatically enabled when the Advanced Data Recording option is purchased. AutoFIELD automatically selects the current field the vehicle is in by matching the current location to a farm map with field boundaries recorded. By knowing the current field the iNEX can:

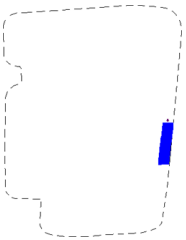
- automatically load any treatments which are partially completed upon return
- ensure any planned treatments are being carried out in the correct field
- ensure all treatments carried out in the given field are recorded with the correct field name

6.3.1 Creating Boundaries

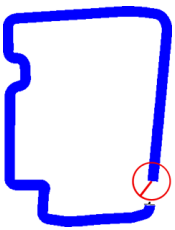
Before AutoFIELD can recognise the field, a farm map containing the field boundaries must be created. The farm map can be created in the office using PlanIT or on the go in the iNEX.

Boundaries can be created on the go when using the iNEX by simply ensuring a complete first lap has been driven around the boundary of the field before treating the rest of the field. When the field is archived, if it has not been done inside a recognised boundary, the iNEX will ask if a boundary is to be created.

1. Start a new field (see 3.6.2 Starting A New Field).
2. An outside perimeter will automatically be created when a treatment is recorded and the end point is within twice the vehicle swath width (or 20 metres, whichever is greater) of the start point. To ensure corners of the boundary do not get cut off it is best to start part way along a straight boundary edge.

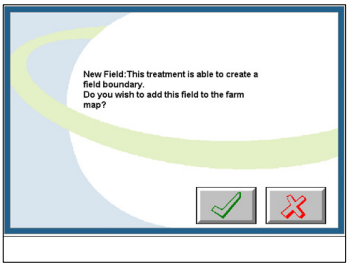


3. Drive a complete lap of the boundary with treatment recording ON. Note that the boundary area will automatically close when returning to within 2 times the vehicle swath width from the starting point.

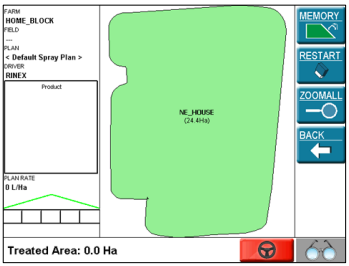


4. When the boundary lap has been completed, check the total area on the AREA Status Bar (see 7.4.5 Select Status Bar Details) is the approximate area of the field.

5. Archive the field (see 5.2.2 Archiving a Field). Provided the field has not been completed within an existing field boundary the iNEX will ask if a new boundary should be created for the field. Press **TICK** to create a boundary.



6. Press **BACK** to return to the Map Screen. The newly created field boundary will appear on the screen as part of the Background Map.



6.3.2 Using Boundaries to Manage Treatments

When field boundaries have been created, the iNEX will use these to determine which field the vehicle is currently in and in turn, automatically load the appropriate Memory slot. When loading the appropriate Memory slot the system will first load any treatment done in the recognised field using the current vehicle and if there are none the system will load an empty Memory slot when the master switch is first turned ON.

When archiving a treatment provided it has been completed inside a recognised boundary the treatment will be stored under the correct field name without any user intervention.

6.4 Using the Tank Manager

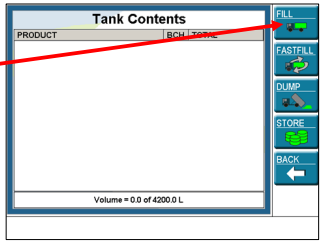
The Tank Manager has two main purposes, to record the products which are being applied in the treatment and also to aid the operator calculating how much of each product to add to the tank to achieve the desired rate.

The Tank Manager can be used in two different ways. The first way generally suits owner/operator type farms where products are recorded on the go as the tank is filled on the vehicle. The second way, using plans imported from a USB memory stick, generally suits larger farms where treatment plans are made ahead of time using PlanIT. The operator can then load the plan to determine the products with which to fill the tank.

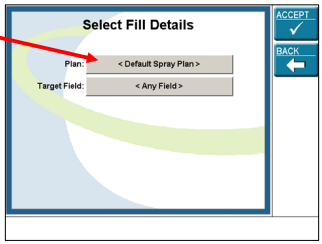
6.4.1 Recording Products Applied

The products which are being applied should be entered in the iNEX before starting the treatment. If done when filling the tank the system calculates the quantities of each product required.

1. From the Main menu press **RECORDS**.
2. Press **TANK**.
3. Press **FILL**.

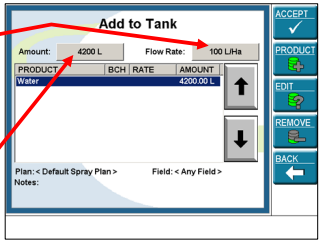


4. Press **PLAN**.
5. Select the Plan to load and press **SELECT**. To add products on the go and not use an actual plan, select from the Default list (either Seeding, Spraying or Spreading).
6. Target Field will be "Any Field" for the Default Plan. Press **ACCEPT**.

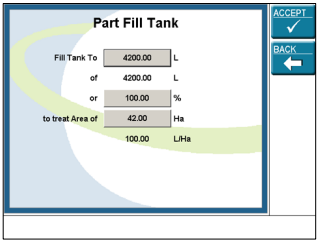


7. If the plan selected is for spraying then set the desired flow rate by pressing the Flow Rate button and entering the required value.

8. By default the system will set the amount to the maximum tank size. To change this press the Amount button.



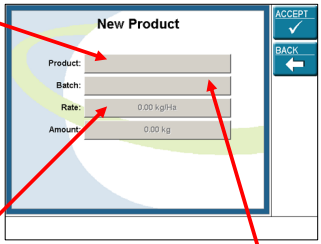
9. The amount can be changed by volume, percentage of tank or by area covered by the current flow rate. Press **ACCEPT** to adjust the tank volume.



10. Press **PRODUCT**.

11. Press the Product name button and select a product from the list or add a new product if required (see 6.4.2 Creating a New Product) and press **SELECT**.

12. Set the product application rate by pressing on the Rate button or set the amount of product being added to the tank by pressing on the Amount button.



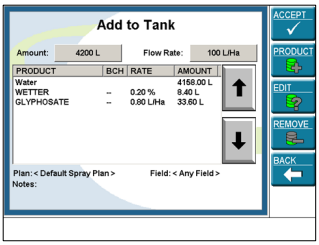
13. Optionally the Batch number for the product being used can be selected by pressing on the Batch button and selecting the batch from the list or adding a new batch number. See 6.4.3 Adding a Product Batch.

14. Press **ACCEPT** to add the product to the tank.

15. Add as many products as required by pressing **PRODUCT** again.

16. Product quantities, rates, and batch details can be changed by selecting the product and pressing **EDIT**. Products can be removed from the list by selecting the product and pressing **REMOVE**.

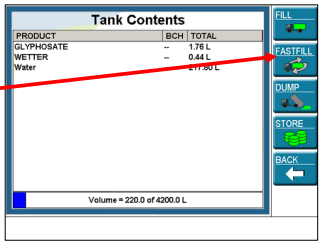
17. The screen shows the list of products which are to be added to the tank and the respective quantities required to attain the application rates, hence this list can be used to determine the quantity of each product with which to fill the tank.



18. When complete press **ACCEPT** to return to the Map Screen and begin work.

The tank volume recorded on the iNEX will run down at a similar rate to the real tank volume on the vehicle. When the tank is completely empty it will also need to be refilled. If refilling the tank with the same product mix or similar there is a Fast Fill process for this.

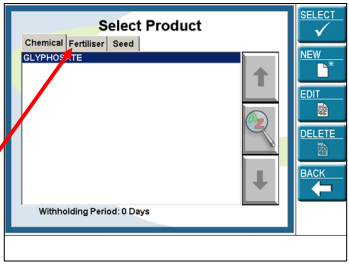
1. From the Main Menu press **RECORDS**.
2. Press **TANK**.
3. Press **FASTFILL**.
4. Make any required changes and press **ACCEPT**.



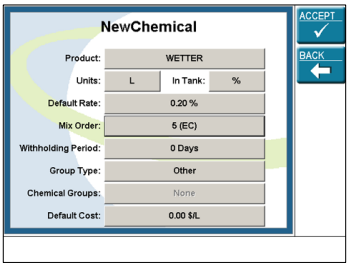
6.4.2 Creating a New Product

Products are split into the three different categories Chemicals, Fertilisers and Seed. The information required for each of these is slightly different but the principal for entering any new product is the same. New products can be added on the go when filling the tank, creating batch records or in the office using PlanIT.

1. Follow the steps in 6.4.1 Recording Products Applied or 6.4.3 Adding a Product Batch to reach the Select Product screen.
2. Select the type of product by pressing the appropriate tab.
3. Press **NEW**.



4. To set any required value press on the appropriate button.
   The minimum that must be entered for a product is Product Name, Variety (if seed product), Units and Units in Tank.
   The Units value refers to the units the product is normally purchased in.
   The Units in Tank value refers to the units that are normally used to describe the application rate of the product.

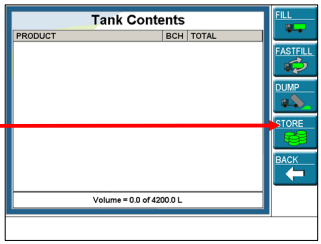


5. Press **ACCEPT** when all required values have been entered.

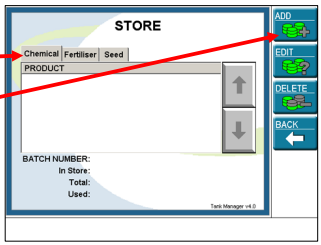
6.4.3 Adding a Product Batch

Product quantities in store and batch numbers can be tracked if required by the iNEX. When product quantities are recorded the system will automatically reduce the total amount recorded in the system for a given product when the field is archived.

1. From the Main Menu press **RECORDS**.
2. Press **TANK**.
3. Press **STORE**.

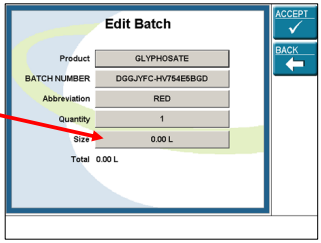


4. Select the type of product by pressing the appropriate tab.
5. Press **ADD**.



6. Press the Product button and select the desired product or create a new one (See 6.4.2 Creating a New Product).
7. Press the Batch Number button to enter the product batch number.

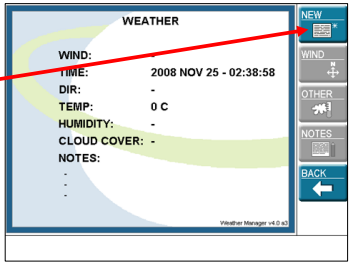
8. If tracking quantities in store, select the size of the container and the quantity of containers in store.
9. Press **ACCEPT**.



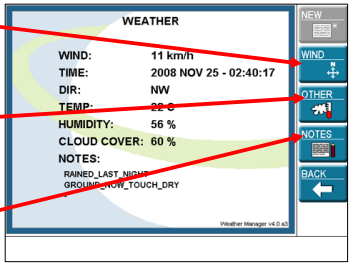
6.5 Recording Weather Details

When the Advanced Data Recording option has been purchased weather records can be entered on the iNEX while out in the field.

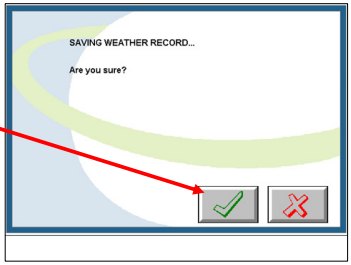
1. From the Main Menu press **RECORDS**.
2. Press **WEATHER**.
3. Press **NEW**.



4. Press **WIND**. Enter wind speed value and the wind direction and press **TICK**.
5. Press **OTHER**. Enter the temperature, humidity and cloud cover values and press **TICK**.
6. If required, press **NOTES**. Enter any required notes on one of the three lines available and press **TICK**.



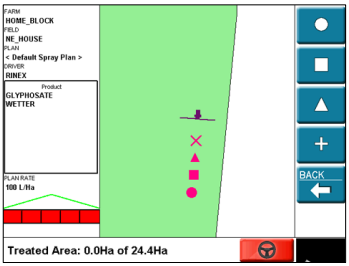
7. To save the weather record press **BACK** and **TICK**.



6.6 Using Flags

Flags are simple points marked on the screen which may indicate something at that GPS position in the field. When the Advanced Data Records option has been purchased four different flag shapes are available to use. Once flags have been marked on the screen they are stored with the treatment which can be later transferred to the office and viewed in PlanIT.

1. From the Main Menu press **RECORDS**.
2. Press **FLAGS**.
3. Press one of the four shapes to mark the current point with that shape flag.



6.7 Driver Security

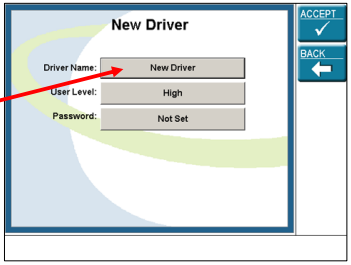
The Advanced Data Recording option also contains driver security features which by default will be set to OFF. If required this feature can be setup to allow operators to log into the iNEX. Each driver can be preconfigured for one of three security levels to prevent unauthorised access to critical settings or to prevent an operator deleting information.

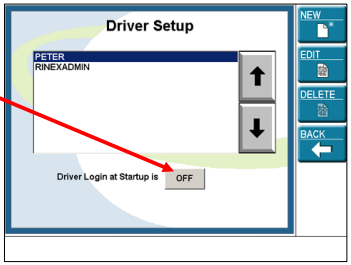
Requiring the driver to log into the iNEX has the added advantage of recording the driver name with the treatment information, which can then be viewed in the History.

6.7.1 Adding a Driver

Depending on the level of security required, drivers can be assigned a User Level (see 6.7.3 About Security Levels) and a Password.

1. From the Main Menu press **SETUP**.
2. Press **MORE**.
3. Press **MEMORY SETUP**.
4. Press **DRIVER**.
5. Press **NEW**.
6. Press **NEW DRIVER**. Enter the drivers name and press **TICK**.
7. Set the User Level, a Password if required and press **ACCEPT**.
8. Set Driver Login at Startup to ON if the driver is required to login each time the system is turned ON.

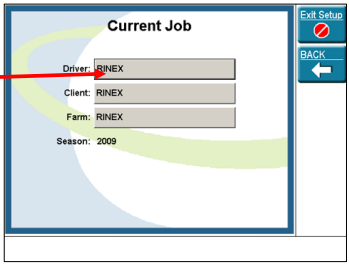




6.7.2 Logging In as the Current Driver

Once the system is setup for Driver Login at startup, when the iNEX is turned ON the user can login. If this option has not been set then the current driver can be changed in the Current Job settings.

1. From the Main Menu press **SETUP**.
2. Press **CURRENT JOB**.
3. Press **DRIVER**.
4. Select the driver from the list and press **SELECT**.
5. If a password is set, enter the password and press **TICK**.



6.7.3 About Security Levels

Each driver User Level, being High, Medium or Low, determines how much access the operator will have to the system.

Low is typically used for temporary operators who have little knowledge of the iNEX. When Low is selected the operator will not be able to change operational settings such as vehicle setup, AutoSPRAY configuration, etc.

Medium is typically used for most operators and this setting allows them full access to the iNEX but limits the ability to delete any data such as complete seasons or products.

High allows the operator full access to the iNEX with no limitations; this setting is typically reserved for owners and managers.

7 Customising the System

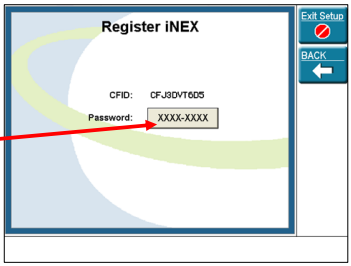
7.1 Enabling New Options

The iNEX can be purchased as an entry level product and as new features are required by the operator they can be added by entering a new feature unlock code (password).

On the first startup of the iNEX the operator will be presented with the password entry screen. Upon entering the supplied password all features purchased with the original system will be enabled.

When any additional features are purchased it will be necessary to enter a new password.

1. From the Main menu press **SETUP**.
2. Press **ABOUT GUIDETRAX**.
3. Press **REGISTER**.
4. Press the Password button.
5. Enter the new password and press **TICK**.



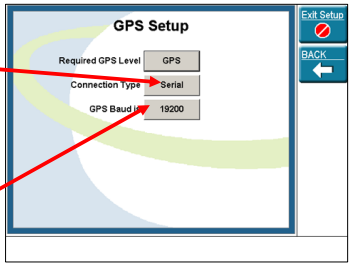
Note: Check the Serial number and CFID number on the system match the numbers supplied with the new password. If the numbers do not match the password will not work.

7.2 Setting the GPS Source Options

Depending on the options purchased the iNEX can work with many different sources of GPS.

By default the system will be configured to work with a GPS receiver supplying NMEA information via a serial connection at 19200 baud. Optionally the system can be configured to use NMEA2000 or John Deere CANbus GPS information supplied via a CANbus connection.

1. From the Main menu press **SETUP**.
2. Press **MORE**.
3. Press **GPS SETUP**.
4. Press the Connection Type button repeatedly until the desired setting is displayed.
5. If connection type is serial, press the GPS Baud button repeatedly until the desired setting is displayed.



Note: The Connection Type and GPS Baud rate must match the GPS receiver being used for the system to receive positioning information.

Note: When using a serial connection the receiver must have the NMEA settings configured to output GPGGA strings at 5Hz.

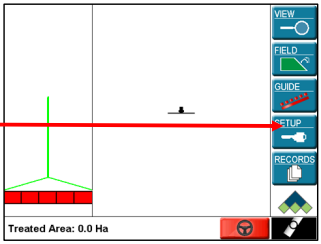
Note: When the mojoRTK console is selected as the Steering Controller the Connection Type will be locked to mojoRTK.

7.3 Selecting the Language

The iNEX has the capability to operate in a number of different languages. If the system has been set to operate in an unknown language these steps can be followed without being able to read the on-screen language.

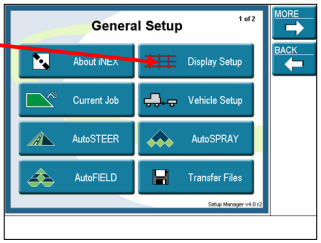
1. Turn the iNEX on and wait for it to display the Main menu
2. Press **SETUP**

   (Button with  Icon)



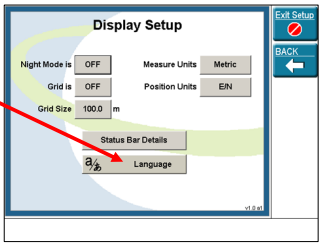
3. Press **DISPLAY SETUP**

   (Button with  Icon)



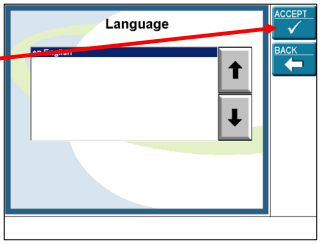
4. Press **LANGUAGE**

   (Button with  Icon)



5. Select required language and press **ACCEPT**

   (Button with  Icon)



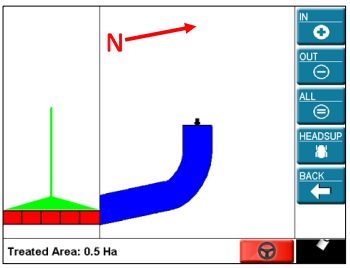
7.4 Configuring the Display

7.4.1 Changing the Treatment Map View

The treatment map can be viewed in one of two different modes, Heads Up or North Up.

Heads Up

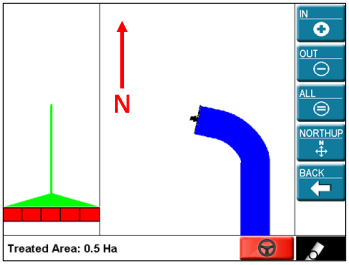
Heads Up displays the treatment map from an operator perspective such that the vehicle is always heading up the screen and objects on the left of the screen will be physically to the left of the operator.



When in Heads Up mode the maximum zoom level is limited while the vehicle is moving.

North Up

North Up displays the treatment map such that north is always at the top of the screen and the vehicle will move around the screen, for example, heading down the screen when travelling south. When in North Up mode the treatment map will display any treatment overlap in green and will allow the operator to zoom out to a higher level than Heads Up.



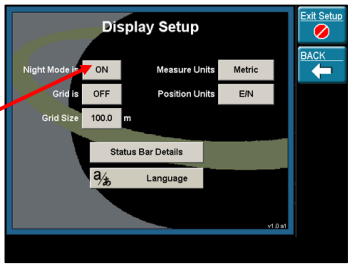
The treatment map view mode can be changed at any time while operating the system

1. From the Main Menu press **VIEW**.
2. Press **HEADSUP** or **NORTHUP**.
   The menu button will display the currently active mode.
3. Also in the View menu the operator can choose to Zoom **IN** or **OUT** on the map by touching the appropriate button. Pressing the Zoom **ALL** button will cause the map to zoom to a level where all of the current treatment is visible.

7.4.2 Turning on Night Mode

In Night Mode the white screen background is reversed to a black background, significantly reducing glare for night time work.

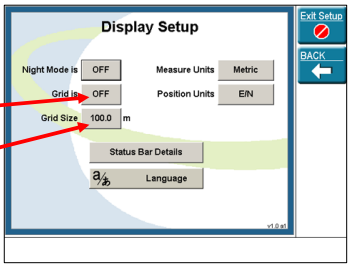
1. From the Main menu press **SETUP**.
2. Press **DISPLAY SETUP**.
3. Press Night Mode **ON**/**OFF** button.
4. Press **BACK** or **EXIT SETUP**.

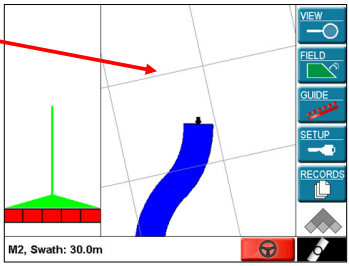


7.4.3 Setting Up a Map Grid

The iNEX can be configured to display a grid along with the treatment on the Map Screen. The grid size can be defined by the operator to help provide a perception of size and scale for the displayed treatment.

1. From the Main menu press **SETUP**.
2. Press **DISPLAY SETUP**.
3. Press the Grid **ON**/**OFF** button.
4. Press the Grid Size button.
5. Enter the preferred grid size and press **TICK**. The grid is now displayed on the Map screen.
6. Press **BACK** or **EXIT SETUP**.

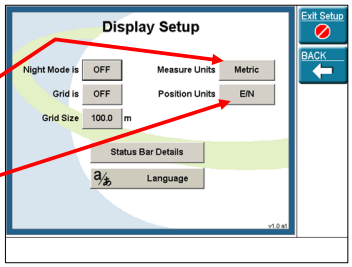




7.4.4 Selecting Measurement & Position Units

The iNEX can be customised to display Metric or Imperial measurement units and also Easting & Northing or Latitude & Longitude position units depending on the operator's requirements.

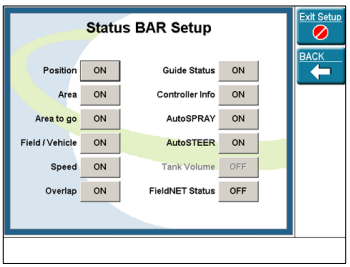
1. From the Main menu press **SETUP**.
2. Press **DISPLAY SETUP**.
3. Press the Measurement Units button repeatedly until the desired setting is displayed.
4. Press the Position Units button repeatedly until the desired setting is displayed.

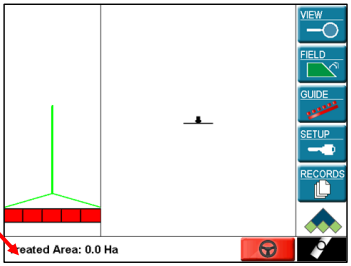


7.4.5 Select Status Bar Details

The Status Bar displays information about the current treatment and connected devices. The information available on the Status Bar can be configured by the operator so that only the required information is displayed.

1. From the Main menu press **SETUP**.
2. Press **DISPLAY SETUP**.
3. Press **STATUS BAR DETAILS**.
4. Select what information is to be displayed by pressing the relevant **ON**/**OFF** button.
5. Press **EXIT SETUP**.
6. To view the different information press the Status Bar to make it advance to the next one.

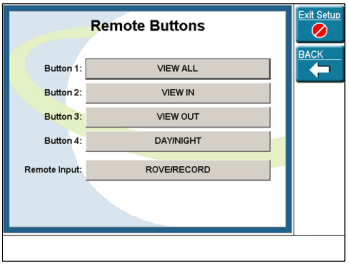




7.5 Configuring Remote Buttons

The iNEX has the capacity for five remote buttons to be configured by the operator. The first four, labelled button 1, 2 ,3 & 4 are on top of the Display. The fifth remote button, labelled Remote Input can be connected to detect any momentary switch. See the iNEX Installation Manual (Part No. 1-1296) for further instruction.

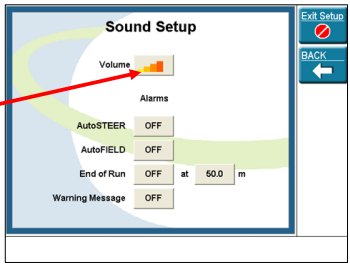
1. From the Main menu press **SETUP**.
2. Press **MORE**.
3. Press **REMOTE BUTTONS**.
4. Press on the remote button which is to be configured (Button 1- 4 or Remote Input).
5. Select the shortcut function from the list and press **SELECT**.



7.6 Setting the Sound Volume & Options

The iNEX has a number of alarms and warnings which will make a sound through the onboard speaker. The options enabled will determine which alarms or warnings can be configured.

1. From the Main menu press **SETUP**.
2. Press **MORE**.
3. Press **SOUNDS**.
4. Press the volume button repeatedly until the desired setting is reached.
5. Press the **ON**/**OFF** button for any of the available alarms or warnings to set whether they are to be heard.



8 AutoSTEER

AutoSTEER is an optional feature which is enabled when AutoSTEER is purchased. Along with the feature unlock code (see 7.1 Enabling New Options) a compatible AutoSTEER controller is also required.

Full instructions for the set up and use of the specific AutoSTEER controllers are documented in a separate manual supplied with each controller.

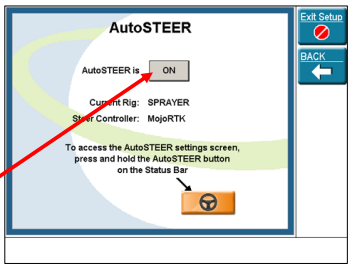
The following sections briefly describe the general use and setup of the AutoSTEER system.

8.1 Configuring AutoSTEER

8.1.1 Set Up the Vehicle

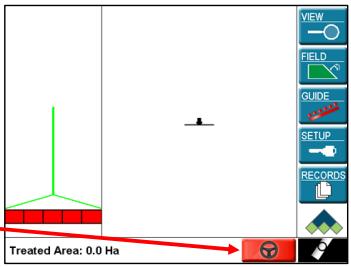
Once the AutoSTEER feature has been enabled the steer controller needs to be selected and AutoSTEER turned ON.

1. Configure the Steer Controller setting for the Rig which has the steer controller installed. See 3.5.2.2 Configure Advanced Settings (Steer Control).
2. From the Main menu press **SETUP**.
3. Press **AUTOSTEER**.
4. Press the AutoSTEER **ON**/**OFF** button repeatedly until it displays ON.



8.1.2 Tune AutoSTEER

Each AutoSTEER controller has specific tuning requirements and the specific instructions supplied with the controller should be read. To access the tuning screen press and hold down the AutoSTEER Status button for three seconds.



8.2 Using AutoSTEER

8.2.1 AutoSTEER Status

When AutoSTEER is set up the AutoSTEER Status button will be displayed on the Status Bar. This button indicates the current condition of the AutoSTEER, can be pressed to engage or disengage steering and if held down for three seconds, will display more setup and tuning options for the AutoSTEER controller.

Some AutoSTEER controllers have a Roading Lockout when the system is first started. The steering cannot be engaged when a Roading Lockout is active.

Pressing the AutoSTEER Status Button when it is RED with a CROSS will cause the system to ask if the roading lockout is to be turned off.

If there is no guideline set, the vehicle is stationary or too far from the guideline, the AutoSTEER Status button will be RED to indicate Not Ready status

Pressing the AutoSTEER Status Button when Not Ready status is active will do nothing.

When GPS is good, the guideline has been set and the vehicle is moving along the guideline then the AutoSTEER Status button will be ORANGE to indicate Ready status.

Pressing the AutoSTEER Status Button when it is displaying Ready status will activate AutoSTEER and the vehicle will begin to steer automatically.

When AutoSTEER is active and the vehicle is steering automatically the AutoSTEER Status button will be GREEN to indicate Engaged status.

Pressing the AutoSTEER Status button when in Engaged status will deactivate AutoSTEER and the vehicle will no longer steer automatically.

If an error occurs that is related to AutoSTEER then the AutoSTEER Status button will be GREY and will do nothing when pressed.

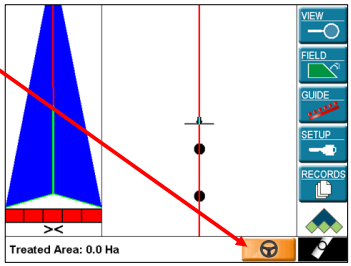
8.2.2 Engaging AutoSTEER

AutoSTEER is simply engaged by pressing the AutoSTEER Status button on the Status Bar at the appropriate time.

Depending on the AutoSTEER controller being used, there are a number of conditions which need to be met before AutoSTEER will be ready to engage.

- Guideline must be set.
- Vehicle must be travelling parallel to the guideline.
- Vehicle must be travelling within range of the guideline.
- Vehicle must be travelling between 1 and 29 km/hr.
- Roading Lockout must be OFF

When all of the above conditions have been met, the AutoSTEER Status button will be ORANGE to indicate Ready status. Pressing the AutoSTEER Status button in this state will engage the steering.



Alternatively a Remote Button can be configured to engage the steering. See section 7.5 Configuring Remote Buttons.

8.2.3 Disengaging AutoSTEER

When AutoSTEER is engaged, there are various methods of disengaging it depending on the steering controller being used.

- Move the steering wheel (if Steering Wheel Cut-out available).
- Stop the vehicle or decrease speed to less than 1km/h.
- Press the AutoSTEER Status button when it is displaying ON.
- Press **GUIDE OFF** in the Guide menu.
- Press a Remote Button configured to engage/disengage steering (see section 7.5 Configuring Remote Buttons.

Note: Read the manual supplied with the AutoSTEER controller to determine which methods are available to engage and disengage steering.

9 Virtual Wrench™

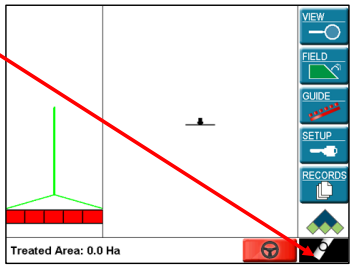
Virtual Wrench™ is an optional feature which is enabled when the iNEX is connected to a mojoRTK console and the required mojoRTK unlock code has been entered (see 7.1 Enabling New Options).

Using the mobile phone network Virtual Wrench™ can be used by the operator to request support or to perform remote software upgrades.

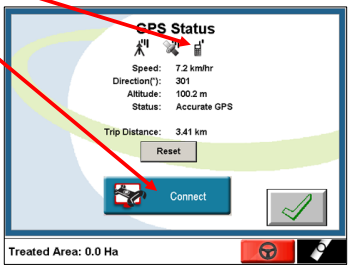
9.1 Connecting to Virtual Wrench™

In order to connect to the Virtual Wrench™ service the iNEX must be connected to a powered mojoRTK console, and the console must have adequate mobile phone signal.

1. Press the GPS Status button .



2. Check mobile phone signal strength.
3. Press **CONNECT**.
   Once connected the Virtual Wrench™ options will be displayed, where further tasks such as requesting support or checking for software upgrades can be performed.

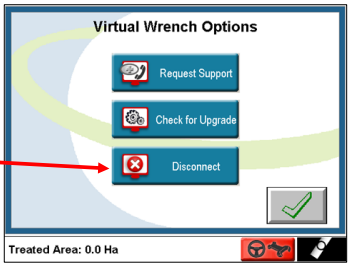


9.1.1 Disconnecting from Virtual Wrench™

The iNEX can continue to be used while connected to the Virtual Wrench™ service. While the system is connected a wrench symbol will be displayed on the AutoSTEER Status button .

The system will automatically disconnect from Virtual Wrench™ when it is turned OFF, alternatively the operator may manually disconnect.

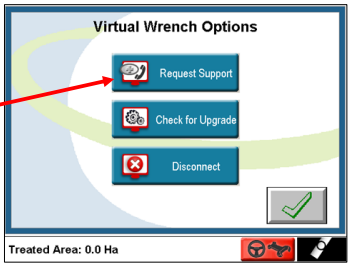
1. Press the GPS Status button .
2. Press **OPTIONS**.
3. Press **DISCONNECT**.



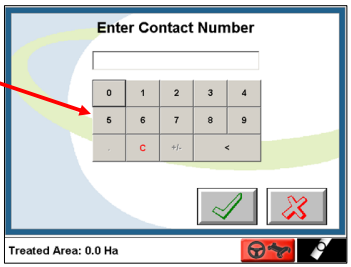
9.2 Requesting Remote Support

Once connected to the Virtual Wrench™ service, Remote Support from a trained technician is available at the press of a button. Once support is requested the technician can view important information about the system before calling the phone number entered.

1. Press the GPS Status button .
2. Press **OPTIONS**
3. Press **REQUEST SUPPORT**



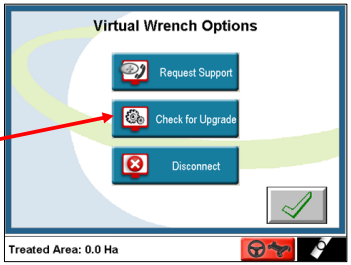
4. Enter a contact phone number using the on-screen keyboard and press **TICK**.



9.3 Upgrading Software Remotely

Virtual Wrench™ offers an easy approach to upgrading the software on the iNEX to the very latest available. Upon request the system can download and automatically install the latest software.

1. Press the GPS Status button  .
2. Press **OPTIONS**.
3. Press **CHECK FOR UPGRADE**. If any upgrades are available the iNEX will download the required files, automatically restart and install the upgrade.



Note: If phone reception is border-line it is advised that the vehicle is not moved while performing a remote upgrade via Virtual Wrench™.

Note: Depending on the quality of the connection to Virtual Wrench™ and the specific files required the upgrade process may take up to 1 hour.

10 AutoSPRAY

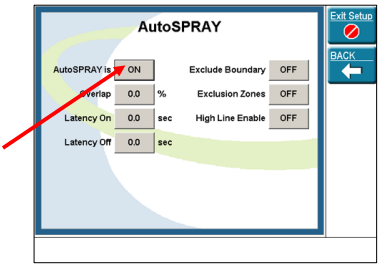
AutoSPRAY is an optional feature which is enabled when AutoSPRAY is purchased. Along with the feature unlock code (see 7.1 Enabling New Options) additional hardware may also be required.

AutoSPRAY greatly reduces the need for manually switching implement sections ON or OFF when going over a previously treated area by automatically controlling the state of the sections.

10.1 Setting Up AutoSPRAY

Once AutoSPRAY has been unlocked on the iNEX the feature can be switched ON and OFF as necessary.

1. From the Main Menu press **SETUP**.
2. Press **AUTOSPRAY**.
3. Press AutoSPRAY **ON**/**OFF** to turn AutoSPRAY ON and enter any required calibration values.



10.2 Calibrating AutoSPRAY

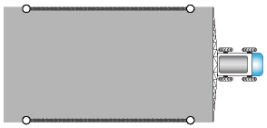
10.2.1 Latency

The most critical parameter for AutoSPRAY is the latency value. Latency is the timing delay from when the switch status is toggled from ON to OFF or OFF to ON, to when the spray nozzle on the boom stops and starts spraying.

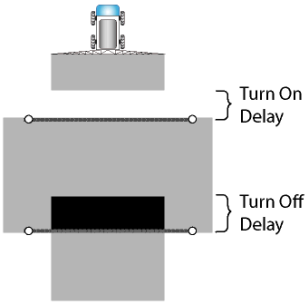
The quickest way to estimate the latency of the sprayer is to use a stop watch to time the delay between turning a section ON and product being delivered from the actual section. This may be a very small value, a few tenths of a second and hard to measure accurately.

A more accurate measure of latency can be performed by measuring the distance travelled at a given speed.

1. Drive slowly in a straight line for 200m with the sprayer ON. The tank should contain only water for the purpose of this exercise. Mark the ground where the end of the boom passes with two pegs and a rope half way along the spray run.



2. Drive over the pervious spray run at a right angle again with the sprayer ON allowing AutoSPRAY to change the state of the sections. Ensure that there is enough distance before crossing over the marked line for the boom trailer to straighten up behind the tractor. Measure the distance from the rope to where the sprayer actually reacted.



Metric Calculations

Latency (s) = Distance Travelled (m) ÷ Speed (km/h) x 3.6

For example, assuming the operator was travelling at 20km/hr and the distance from the rope to where the sprayer reacted is 5m:

5m ÷ 20km/h x 3.6 = 0.9 seconds Latency

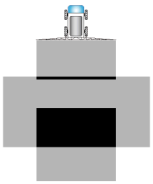
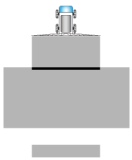
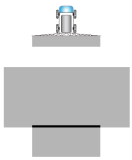
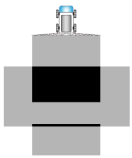
Imperial Calculations

Latency (s) = Distance Travelled (ft) ÷ Speed (mph) x 0.68

For example, assuming the operator was travelling at 12mph and the distance from the rope to where the sprayer reacted is 16ft:

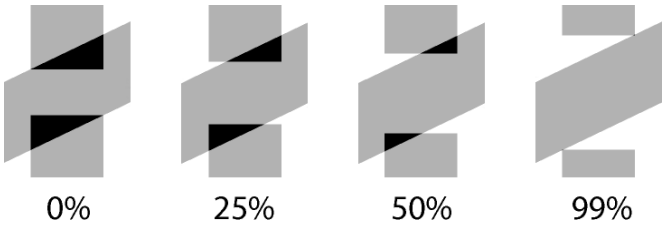
16ft ÷ 12mph x 0.68 = 0.9 seconds Latency

10.2.1.1 Troubleshooting Latency

Problem		Solution
	The section takes too long to turn OFF and is causing overlap	Increase OFF Latency value
	The section turns OFF too early and is causing a missed area	Decrease OFF Latency value
	The section takes too long to turn ON and is causing a missed area	Increase ON Latency value
	The section turns ON too early and is causing overlap	Decrease ON Latency value

10.2.2 Overlap

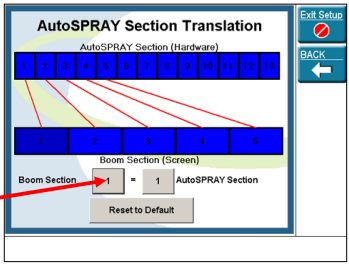
AutoSPRAY controls the overlap tolerance which is used to decide when to turn valves on or off. When set to its default of 0%, the system will turn the valves on whenever any part of the sensed area has not been sprayed. It is effectively the percent of miss that the system will tolerate. If the value is increased, the system will not turn the valves on when traversing over a small missed area such as a line between two spray swaths.

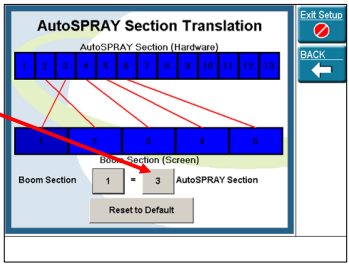


10.2.3 Translation

The translation feature allows the iNEX to reconfigure the section voltage output to different pins on the AutoSPRAY voltage interface connector. This may be necessary if some or all of the sections turn off in the wrong order when AutoSPRAY automatically turns sections ON or OFF over a treated area. In most cases this feature will not be required unless the vehicle has custom wiring which is different to most normal installations.

1. From the Main Menu press **SETUP**.
2. Press and hold the **AUTOSPRAY** button for four seconds, until the AutoSPRAY Section Translation screen is displayed.
3. Select the boom section which is incorrect by pressing the **BOOM SECTION** button until the required number is displayed.
4. Set the section which is changing when the on screen boom section is changing by pressing the **AUTOSPRAY SECTION** button, entering the value and pressing **TICK**.
5. Press **BACK** or **EXIT SETUP** to complete.





10.3 Using AutoSPRAY

Once properly calibrated using AutoSPRAY is as simple as driving and turning on the master switch. Some details of how to use AutoSPRAY will depend on the flow controller which is being used. In most situations if the flow controller is a voltage controller then the section switches on the flow controller should be left in the OFF position while the master switch is left in the ON position. Most flow controllers which communicate over serial or CANbus will require the section switches to be left in the ON position.

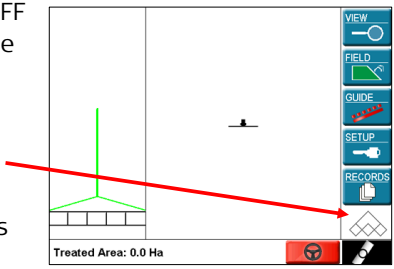
10.3.1 Normal Operation

During normal operation the AutoSPRAY Status button will be coloured blue and green. When the vehicle passes over a previously treated area the iNEX will automatically turn the overlapping sections OFF. On leaving the treated area the iNEX will automatically turn the relevant sections back ON.

10.3.2 Switching to Manual Control

From time to time it may be necessary to manually control the state of implement sections. To do this there are two options, switch to manual control or use the AutoSPRAY Override function. Provided the system is properly configured for the connected flow controller, switching to manual control turns automatic control of the sections off, and the iNEX simply detects the sections which are manually being used on the controller.

For manual section detection to work the Section Switches setting must be set to External. AutoSPRAY must be OFF before the Section Switches setting can be changed. See 3.5.3.2 Section Switches.

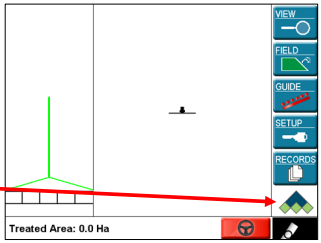


To change from AutoSPRAY to manual control, simply turn AutoSPRAY OFF by pressing on the AutoSPRAY Status button on the Main Menu. The AutoSPRAY Status button will change to white.

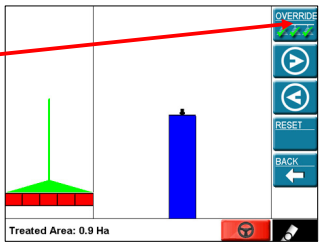
10.3.3 AutoSPRAY Override

AutoSPRAY Override can be used to force some sections to ON or OFF while the rest remain controlled automatically.

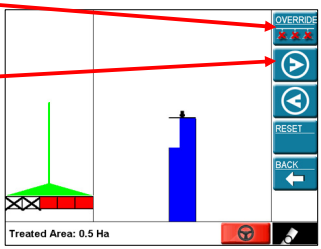
1. From the Main Menu press and hold AutoSPRAY Status button until the AutoSPRAY Override Menu is displayed.



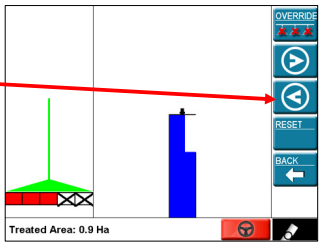
2. Press **OVERRIDE** until the required type of override is displayed.
   When ticks are displayed overridden sections will be forced ON.
   When crosses are displayed overridden sections will be forced OFF.



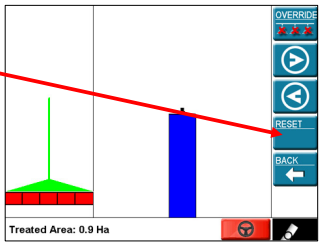
3. Press the **RIGHT** arrow to select sections to be overridden from left to right.



4. Press the **LEFT** arrow to select sections to be overridden from right to left.



5. Press **RESET** to return all sections to AutoSPRAY control.



11 FieldNET

FieldNET is an optional feature which is enabled when the FieldNET option is purchased. Along with the feature unlock code (see 7.1 Enabling New Options) additional hardware may also be required.

FieldNET operates with up to four vehicles operating in the same paddock and transferring their information to all other vehicles in the paddock.

The real-time mapping functionality in the iNEX is transmitted to the other vehicles with FieldNET so all vehicles will be able to see exactly which areas have been treated, regardless of the vehicle that applied the product.

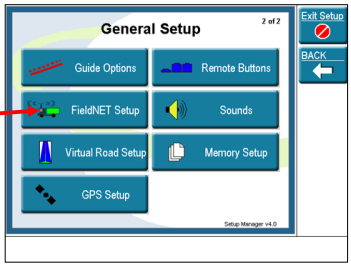
Further to this FieldNET allows Guidance and AutoSPRAY functions to operate with any of the vehicles in the paddock. This means that any vehicle equipped with a FieldNET unit will have accurate Guidance from any treatment and the AutoSPRAY controller will automatically shut off boom sections across any part of the field that has been previously treated, regardless of the vehicle.

11.1 Configuring the System for FieldNET

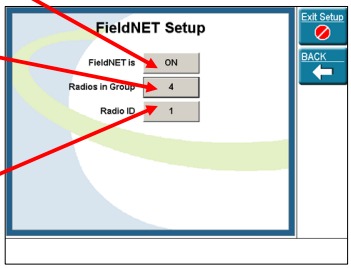
While the FieldNET radios will come preconfigured, you may be required to change the Group ID on the radio if interference from other nearby FieldNET radios is experienced. See appendix 15.2 Setting the FieldNET Radio Group ID.

After connecting the FieldNET radio and enabling the FieldNET option the next step is to configure the settings in the iNEX.

1. From the Main Menu press **SETUP**.
2. Press **MORE**.
3. Press **FIELDNET SETUP**.
4. Press the FieldNET **ON**/**OFF** button until ON is displayed.



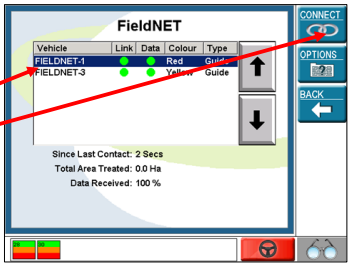
5. Select the number of vehicles in the FieldNET group by pressing on the Radios in Group button.
6. All FieldNET radios in the group require a unique number. Select this number by pressing on the Radio ID button.



11.2 Using FieldNET

11.2.1 Connecting to Another Vehicle in the Group

1. Press **FIELD**.
2. Press **FIELDNET**.
3. Select the vehicle from the list to connect to by pressing on it and then press **CONNECT**. The Link status light will turn green.



By default a Guide Link Type will be created between your vehicle and the selected vehicle. The Guide Link Type will treat the incoming information as if it was done with your vehicle, so that AutoSPRAY and Guidance will work with the treatment done by the other vehicle. For more information on Link Types see 11.2.2 Understanding the Link Type.

11.2.2 Understanding the Link Type

There are three Link Types available: Guide, Display and Hidden. By default when a new link is set up with a vehicle the Link Type selected will be Guide. Each of the Link Types are described below.

Guide The treatment received from the selected vehicle will be treated as if it is the same as the current treatment and therefore all of the normal features of the iNEX such as Guidance and AutoSPRAY are available.

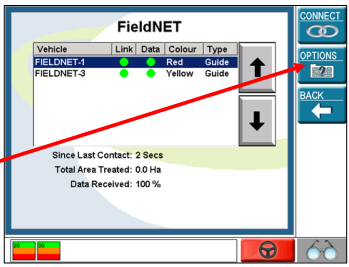
Display The treatment received from the selected vehicle will be in a separate layer under the current treatment. AutoSPRAY and Guidance will not recognise any treatment received from the other vehicle.

Hidden Hidden can be selected when a link has been created with another vehicle but it is no longer desirable to see or work with the treatment.

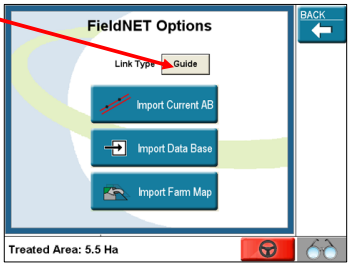
11.2.3 Changing the Link Type

The Link Type can be changed at any time, either before creating a link with a vehicle or after treatment has been received.

1. Press **FIELD**.
2. Press **FIELDNET**.
3. Select the vehicle from the list to set the Link Type and press **OPTIONS**.



4. Repeatedly press **LINK TYPE** until the desired Link Type is displayed.
5. Press **BACK**. Note that the Link Type for the selected vehicle has changed.



11.2.4 Understanding the Status of Other Vehicles

As FieldNET operates with multiple vehicles which may at times drop in and out of communication it is important to know the current status of treatment information received from each vehicle. The FieldNET Status Bar can be used for this purpose.

The FieldNET Status Bar contains one box for each other vehicle in the group. For example if there are four vehicles in the group, three boxes will be shown where Vehicle 2 is box 1, Vehicle 3 is box 2, Vehicle 4 is box 3.

The current status of communication is represented by the highest colour in the box, where each colour is determined by a combination of the time since last contact with the other vehicle and the percentage of area received at last contact.

White indicates that there is no current link to that vehicle.

Red indicates that there may be missing data or that there has been a long time since contact with the other vehicle. In other words there is a high chance that there is an unknown area that has already been treated by another vehicle.

Orange indicates a medium chance that there is an unknown area that has already been treated by another vehicle. It also indicates that there has been relatively recent communication and data exchange between the vehicles.

Green indicates a low chance that there is an unknown area that has already been treated by another vehicle. It also indicates that there has been recent communication and data exchanged between the vehicles.

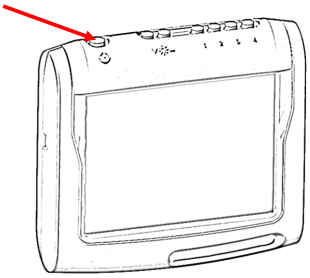
Antenna In addition to the coloured status block, each time the vehicle receives data from the vehicle an antenna icon will flash in the box. If the antenna is not flashing then the vehicle represented by the box is out of range or switched OFF.

12 System Maintenance

12.1 Starting Up in Launcher Mode

Launcher mode provides access to a menu of system maintenance tools, such as calibrating the touch screen or performing a software update.

1. To start into Launcher mode the iNEX must first be OFF.
2. When turning ON press and hold the Power button until two short beeps are heard.



3. When the iNEX has started press **ENTER LAUNCHER**.

12.2 Upgrading Software

Software upgrades can be performed in two ways, from a USB memory stick using Launcher mode or when the option is available via a remote download from Virtual Wrench™ (see 9.3 Upgrading Software Remotely).

1. To upgrade software via a USB memory stick start the iNEX into Launcher mode (see 12.1 Starting Up in Launcher Mode).
2. Press **SOFTWARE**.
3. Press **UPGRADE**.

12.3 Downgrading Software

When the iNEX is updated a backup of the current software will be created to allow the system to be restored to the previous version if required.

When the previous version is restored any settings or treatments recorded since the upgrade will be lost.

1. Start the iNEX into Launcher mode (see 12.1 Starting Up in Launcher Mode).
2. Press **SOFTWARE**.
3. Press **RESTORE PREVIOUS**.

12.4 Calibrating the Touch Screen

The iNEX has the touch screen calibrated at the factory, however over time the touch sensor may change and require recalibration.

1. Start the iNEX into Launcher mode (see 12.1 Starting Up in Launcher Mode).
2. Press **CALIBRATE**.
3. Press each of the on-screen targets as they are shown. When complete press **ACCEPT**.

12.5 System Recovery Options

In the event that the iNEX becomes unresponsive or data on the system becomes unusable there are a number of steps that can be taken to recover the iNEX.

A forced shutdown will make unresponsive systems turn off. In most cases when the iNEX is then turned on again the problem will be resolved. If a forced shutdown is often required the system may need servicing.

If data on the system becomes unusable then a corruption may have occurred. There are a number of options to fix data corruptions and each should be tried in the following order:

1. Check Disk
2. Repair Database
3. Soft Reset
4. Hard Reset.

The Soft Reset and Hard Reset options should be used as a last resort as they will delete some or all data from the iNEX.

12.5.1 Force Shutdown

If the iNEX becomes unresponsive and cannot be turned off, then a forced shutdown may be required.

A shutdown can be forced by removing power to the Display for 30 seconds.

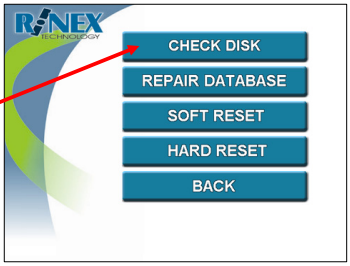
Or

Press and hold the Power button for five seconds until three long beeps are heard.

12.5.2 Check Disk

Running Check Disk will cause the iNEX to scan the drive for any corruption and fix it if possible. There is a very low chance of losing any treatment data or settings.

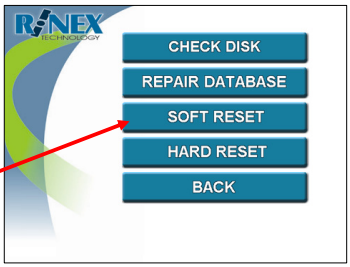
1. Start the iNEX into Launcher mode (see 12.1 Starting Up in Launcher Mode).
2. Press **SYSTEM TOOLS**.
3. Press **CHECK DISK**.



12.5.3 Repair Database

Running Repair Database will cause the iNEX to scan the database for any errors and fix them if possible. There is a very low chance of losing any data or settings.

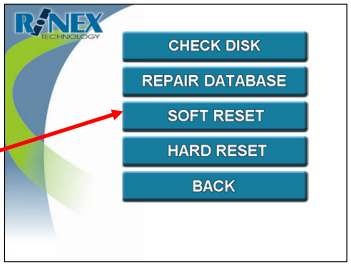
1. Start the iNEX into Launcher mode (see 12.1 Starting Up in Launcher Mode).
2. Press **SYSTEM TOOLS**.
3. Press **REPAIR DATABASE**.



12.5.4 Soft Reset

Running Soft Reset will cause the iNEX to clear all temporary files and all treatments currently in the Field Memory. Some data will be lost.

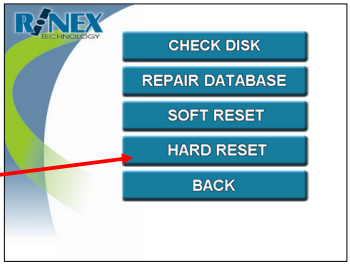
1. Start the iNEX into Launcher mode (see 12.1 Starting Up in Launcher Mode).
2. Press **SYSTEM TOOLS**.
3. Press **SOFT RESET**.



12.5.5 Hard Reset

A Hard Reset should be used as a last resort to recover the iNEX, as running Hard Reset will cause the system to clear all data, returning it to factory default condition.

1. Start the iNEX into Launcher mode (see 12.1 Starting Up in Launcher Mode).
2. Press **SYSTEM TOOLS**.
3. Press **HARD RESET**.



13 Safety

The iNEX is a safe product and the following directions should enable the person responsible for the product, and the person who actually uses the equipment, to anticipate and avoid operational hazards.

The person responsible for the product must ensure that all users understand these directions and adhere to them.

13.1 Precautions and Safety Measures

- Review all safety information specific to the manufacturer and model of your vehicle before installing or operating the iNEX in it.
- Do not disassemble or alter the iNEX. Doing so may result in failure, electric shock, or fire.
- Do not subject the iNEX to high levels of moisture. Use the iNEX only in vehicles with a 12-volt negative ground system.
- Follow recommended safety precautions and operating procedures at all times.
- The operator assumes responsibility for the installation and use of the product.

13.2 Intended Use

Permitted use

- The iNEX is intended for agricultural and forestry use only.
- The iNEX is only intended to be fitted to agricultural vehicles. It is not permitted to install this product in any other vehicles.
- Data communication with external appliances.
- Automatic section control with external devices.
- Guidance of approved agricultural equipment.

Adverse use

- Use of the product without instruction.
- Use outside of the intended limits.
- Disabling safety systems.
- Removal of hazard notices.
- Opening the product using tools, for example screwdriver, unless this is specifically permitted for certain functions.
- Modification or conversion of the product.
- Use after misappropriation.
- Use of products with obviously recognizable damages or defects.
- Use with accessories from other manufacturers without the prior explicit approval of Leica Geosystems.
- Inadequate safeguards at the working site, for example when using on the intended site.

Warning

- Adverse use can lead to injury, malfunction and damage.
- It is the task of the person responsible for the equipment to inform the user about hazards and how to counteract them. The product is not to be operated until the user has been instructed on how to work with it.

- Unauthorized modification of agricultural machine by mounting or installing the product may alter the function and safety of the machine.
- **Precautions:**
  Follow the instructions of the machine manufacturer. If no appropriate instruction is available, ask the machine manufacturer for instructions before mounting or installing the product.

13.3 Limits of Use

Environment

Suitable for use in an atmosphere appropriate for permanent human habitation: not suitable for use in aggressive or explosive environments.

Danger

Local safety authorities and safety experts must be contacted before working in hazardous areas, or in close proximity to electrical installations or similar situations by the person in charge of the product.

13.4 Responsibilities

Manufacturer of the product

Leica Geosystems AG, CH-9435 Heerbrugg, hereinafter referred to as Leica Geosystems, is responsible for supplying the product, including the user manual and original accessories, in a completely safe condition.

Manufacturers of non Leica Geosystems accessories

The manufacturers of non Leica Geosystems accessories for the product are responsible for developing, implementing and communicating safety concepts for their products, and are also responsible for the effectiveness of those safety concepts in combination with the Leica Geosystems product.

Person in charge of the product

The person in charge of the product has the following duties:

- To understand the safety instructions on the product and the instructions in the user manual.
- To be familiar with local regulations relating to safety and accident prevention.
- To inform Leica Geosystems immediately if the product and the application becomes unsafe.
- To ensure that the national laws, regulations and conditions for the operation of radio transmitters are respected.

Warning

- The person responsible for the product must ensure that it is used in accordance with the instructions. This person is also accountable for the training and the deployment of personnel who use the product and for the safety of the equipment in use.

13.5 Hazards of Use

Warning

- The absence of instruction, or the inadequate imparting of instruction, can lead to incorrect or adverse use, and can give rise to accidents with far-reaching human, material, financial and environmental consequences.
- **Precautions:**
  All users must follow the safety directions given by the manufacturer and the directions of the person responsible for the product.
- Watch out for erroneous measurement results if the product has been dropped or has been misused, modified, stored for long periods or transported.
- **Precautions:**
  Periodically carry out test measurements and perform the field adjustments indicated in the user manual, particularly after the product has been subjected to abnormal use and before and after important measurements.
- If the product is used with accessories, for example masts, staffs, poles, you may increase the risk of being struck by lightning.
- **Precautions:**
  Do not use the product in a thunderstorm.
- Inadequate securing of the working site can lead to dangerous situations.
- **Precautions:**
  Always ensure that the working site is adequately secured. Adhere to the regulations governing safety and accident prevention and road traffic.
- Only Leica Geosystems authorized service workshops are entitled to repair these products.

Caution

- If the accessories used with the product are not properly secured and the product is subjected to mechanical shock, for example blows or falling, the product may be damaged or people may sustain injury.
- **Precautions:**
  When setting-up the product, make sure that the accessories are correctly adapted, fitted, secured, and locked in position.
- Avoid subjecting the product to mechanical stress.

Warning

- Incorrect fastening of the iNEX and cabling to vehicles or transporters poses the risk of the equipment being broken by mechanical influence, vibration. This may result in accident and injury.
- **Precautions:**
  Attach the controller and cabling professionally. Ensure that the mounting device is correctly mounted and able to safely carry the weight of the controller (>1 kg).

Caution

- Installing near mechanically moving machine components may damage the product.
- **Precautions:**
  Deflect the mechanically moving machine components as far as possible and define a safe installation zone.

Warning

- High mechanical stress, high ambient temperatures or immersion into fluids can cause leakage, fire or explosions of the controller.

- **Precautions:**
  Protect the controller from mechanical influences and high ambient temperatures. Do not drop or immerse controller into fluids.

Danger

If the product is used with accessories, for example masts, staffs, poles, you may increase the risk of being struck by lightning. Danger from high voltages also exists near power lines. Lightning, voltage peaks, or the touching of power lines can cause damage, injury and death.

- **Precautions:**
  - Do not use the product in a thunderstorm as you may increase the risk of being struck by lightning.
  - Be sure to remain at a safe distance from electrical installations. Do not use the product directly under or in close proximity to power lines. If it is essential to work in such an environment contact the safety authorities responsible for electrical installations and follow their instructions.
  - To prevent damages due to indirect lightning strikes (voltage spikes) cables, for example, power source or controller should be protected with appropriate protection elements, like a lightning arrester. These installations must be carried out by an authorized specialist.
  - If there is a risk of a thunderstorm, or if the equipment is to remain unused and unattended for a long period, protect your product additionally by unplugging all systems components and disconnecting all connecting cables and supply cables, for example, receiver - antenna.

Warning

- If the product is improperly disposed of, the following can happen:
  - If polymer parts are burnt, poisonous gases are produced which may impair health.

- By disposing of the product irresponsibly you may enable unauthorized persons to use it in contravention of the regulations, exposing themselves and third parties to the risk of severe injury and rendering the environment liable to contamination.

- **Precautions:**

The product must not be disposed with household waste. Dispose of the product appropriately in accordance with the national regulations in force in your country. Always prevent access to the product by unauthorized personnel.

Product specific treatment and waste management information can be downloaded from the Leica Geosystems home page at http://www.leica-geosystems.com/treatment or received from your Leica Geosystems dealer.

13.6 Electromagnetic Compatibility EMC

Description

The term Electromagnetic Compatibility is taken to mean the capability of the product to function smoothly in an environment where electromagnetic radiation and electrostatic discharges are present, and without causing electromagnetic disturbances to other equipment.

Warning

- Electromagnetic radiation can cause disturbances in other equipment.
- Although the product meets the strict regulations and standards which are in force in this respect, Leica Geosystems cannot completely exclude the possibility that other equipment may be disturbed.

Caution

- There is a risk that disturbances may be caused in other equipment if the product is used in conjunction with accessories from other manufacturers, for example non-standard cables or external devices.
- **Precautions:**
  Use only the equipment and accessories recommended by Leica Geosystems. When combined with the product, they meet the strict requirements stipulated by the guidelines and standards. When using external devices, pay attention to the information about electromagnetic compatibility provided by the manufacturer.

Warning

- If the product is operated with connecting cables attached at only one of their two ends, for example external supply cables, interface cables, the permitted level of electromagnetic radiation may be exceeded and the correct functioning of other products may be impaired.

- **Precautions:**
  While the product is in use, connecting cables, for example product to external battery, product to external devices, must be connected at both ends.

14 International Limited Warranty, Software Licence Agreement

This section describes the applicable warranty and software agreement.

International Limited Warranty

This product is subject to the terms and conditions set out in the International Limited Warranty which you can download from the Leica Geosystems home page at
http://www.leica-geosystems.com/internationalwarranty
or collect from your Leica Geosystems distributor.

The foregoing warranty is exclusive and is in lieu of all other warranties, terms or conditions, express or implied, either in fact or by operation of law, statutory or otherwise, including warranties, terms or conditions of merchantability, fitness for a particular purpose, satisfactory quality and non-infringement, all of which are expressly disclaimed.

Software Licence Agreement

This product contains software that is pre-installed on the product, or that is supplied to you on a data carrier medium, or that can be downloaded by you online pursuant to prior authorization from Leica Geosystems. Such software is protected by copyright and other laws and its use is defined and regulated by the Leica Geosystems Software Licence Agreement, which covers aspects such as, but not limited to, Scope of the Licence, Warranty, Intellectual Property Rights, Limitation of Liability, Exclusion of other Assurances, Governing Law and Place of Jurisdiction. Please make sure, that at any time you fully comply with the terms and conditions of the Leica Geosystems Software Licence Agreement.

Such agreement is provided together with all products and can also be referred to and downloaded at the Leica Geosystems home page at http://www.leica-geosystems.com/swlicense or collected from your Leica Geosystems dealer.

You must not install or use the software unless you have read and accepted the terms and conditions of the Leica Geosystems Software Licence Agreement. Installation or use of the software or any part thereof, is deemed to be an acceptance of all the terms and conditions of such licence agreement. If you do not agree to all or some of the terms of such licence agreement, you may not download, install or use the software and you must return the unused software together with its accompanying documentation and the purchase receipt to the dealer from whom you purchased the product within ten (10) days of purchase to obtain a full refund of the purchase price.

15 Appendix

15.1 Equipment Measurement Examples

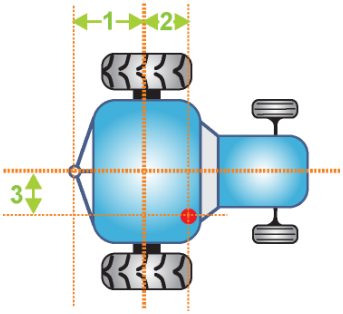
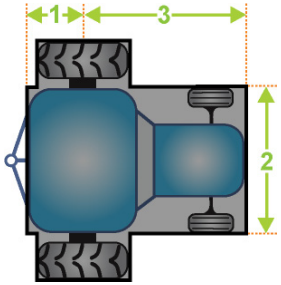
There are many different types of vehicles and implements. A few are listed here followed with a description of how they are to be measured.

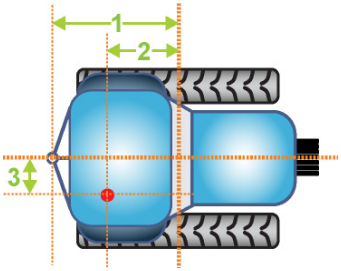
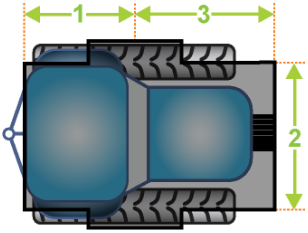
- Standard Tractor
- Tracked Tractor
- Articulated Tractor
- Gooseneck Hitch
- Self Propelled Sprayer – Rear Mount Boom
- Self Propelled Sprayer – Front Mount Boom
- Self Propelled Sprayer – Four Wheel Steer
- Self Propelled Combine Harvester
- Tow Behind Boom
- Tow Behind Boom - Steered
- Tow Between Tank or Air Cart
- Trailer with Front Pivoting Axle

The main principal when entering equipment into the iNEX is that measurements are intended to define the antenna point in relation to the equipments pivoting point, such as a fixed axle, and the hitch or flow point.

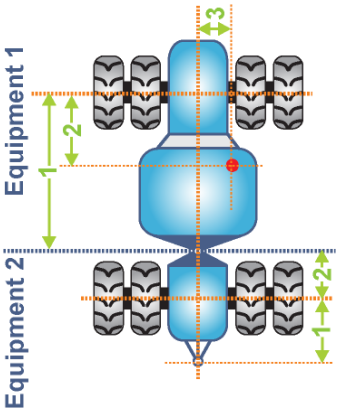
When measuring the GPS Antenna in relation to the equipment centreline if the antenna is to the Left of centre it should be entered as a negative value, and equally if the antenna is on the Right of centre it should be entered as a positive value.

When connected to a mojoRTK console the antenna reference point is inline with the two antennas and no GPS antenna offset needs to be entered as this will be automatically set by the mojoRTK implement offset value.

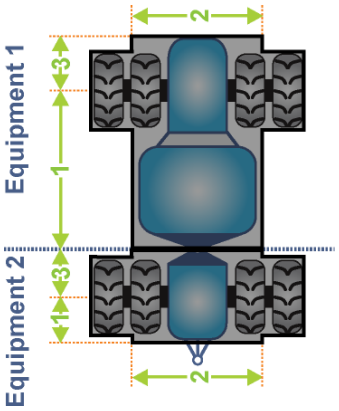
Standard Tractor		
	Physical Measurement	Value
	1. Hitch or flow point to rear axle centreline.	
	2. Rear axle centreline to GPS antenna. If GPS antenna is behind the axle then enter value as a negative.	
	3. Vehicle centreline to GPS antenna. If GPS antenna is left of the centreline then enter value as a negative.	
	Icon Measurement	Value
	1. Back of cabin to axle centreline.	
	2. Vehicle body width.	
	3. Axle centreline to front of vehicle.	

Tracked Tractor		
	Physical Description	Value
	1. Hitch or flow point to track centreline.	
	2. Track centreline to GPS antenna. If GPS antenna is behind track centreline as shown then enter value as a negative.	
	3. Vehicle centreline to GPS antenna. If GPS antenna is left of the centreline then enter value as a negative.	
	Icon Measurement	Value
	1. Back of cabin to track centreline.	
	2. Vehicle body width.	
	3. Track centreline to front of vehicle.	

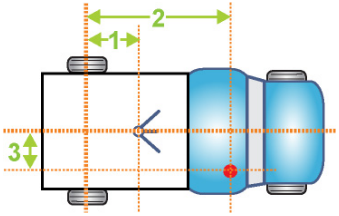
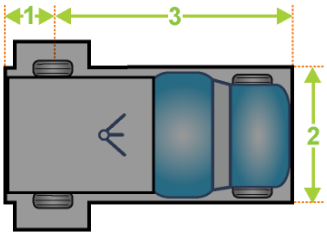
Articulated Tractor

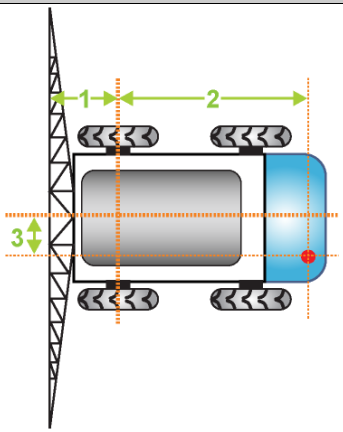
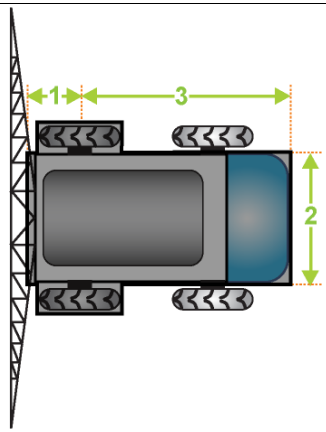


Physical Description	Value
Equipment 1 – Front Half	
1. Articulation point to front axle centreline.	
2. Front axle centreline to GPS antenna. If GPS antenna is behind front axle centreline as shown then enter value as a negative.	
3. Vehicle centreline to GPS antenna. If GPS antenna is left of the centreline then enter value as a negative.	
Equipment 2 – Rear Half	
1. Hitch or flow point to rear axle centreline.	
2. Rear axle centreline to articulation point.	

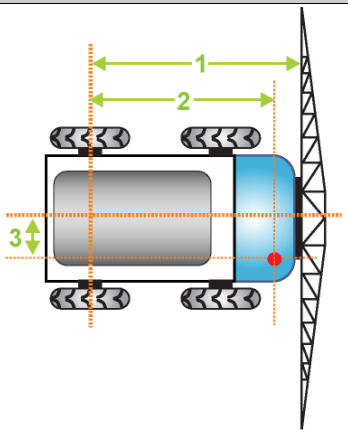


Icon Measurement	Value
Equipment 1 – Front Half	
1. Articulation point to front axle centreline.	
2. Vehicle body width.	
3. Front axle centreline to front of vehicle.	
Equipment 2 – Rear Half	
1. Rear axle centreline to back of tractor.	
2. Vehicle body width. Same as value 2 above.	
3. Rear axle centreline to articulation point.	

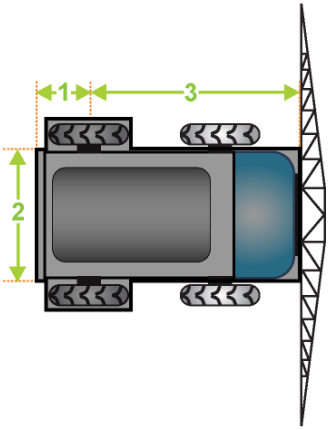
Gooseneck Hitch		
	Physical Measurement	Value
	1. Hitch point to rear axle centreline. if hitch point is in front of rear axle as shown then enter value as a negative.	
	2. Rear axle centreline to GPS antenna.	
	3. Vehicle centreline to GPS antenna. If GPS antenna is left of the centreline then enter value as a negative.	
	Icon Measurement	Value
	1. Back of vehicle to rear axle centreline.	
	2. Vehicle body width.	
	3. Rear axle centreline to front of vehicle.	

Self Propelled Sprayer – Rear Mount Boom		
	Physical Measurement	Value
	1. Flow point to rear axle centreline.	
	2. Rear axle centreline to GPS antenna.	
	3. Vehicle centreline to GPS antenna. If GPS antenna is left of the centreline then enter value as a negative.	
	Icon Measurement	Value
	1. Flow point to rear axle centreline. Same value as Physical Measurement 1 above.	
	2. Vehicle body width.	
	3. Rear axle centreline to front of vehicle.	

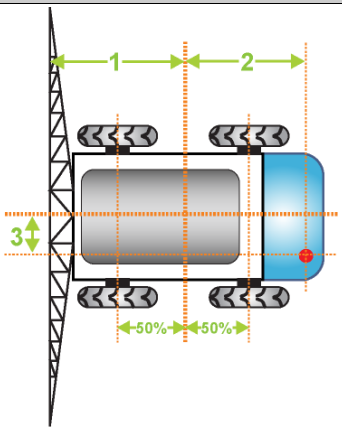
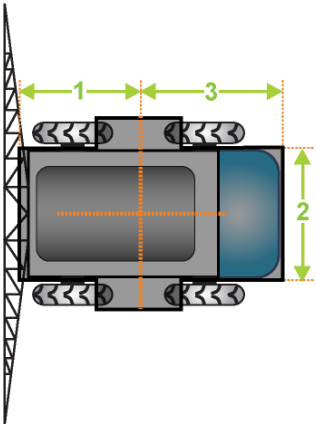
Self Propelled Sprayer – Front Mount Boom

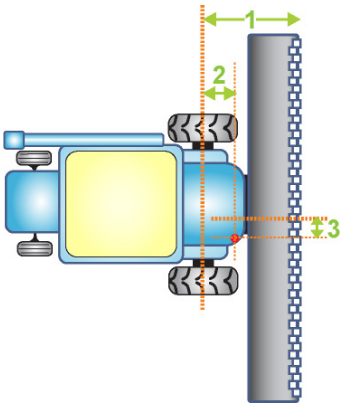
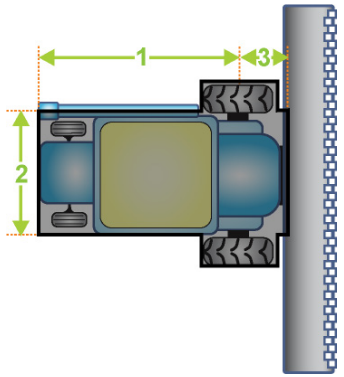


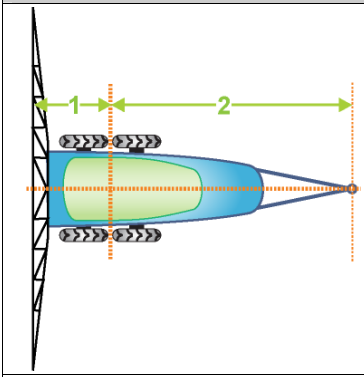
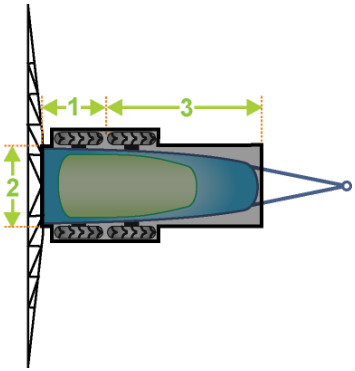
Physical Measurement	Value
1. Flow point to rear axle centreline. Value should be entered as a negative to indicate a front boom.	
2. Rear axle centreline to GPS antenna.	
3. Vehicle centreline to GPS antenna. If GPS antenna is left of the centreline then enter value as a negative.	

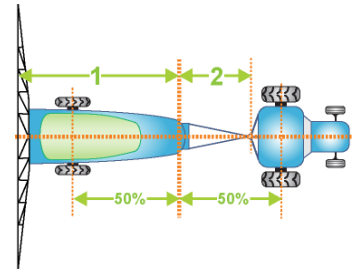
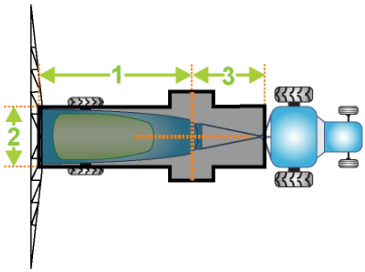


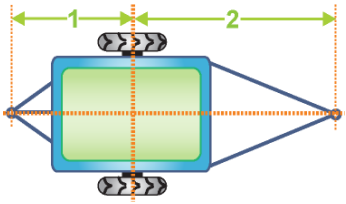
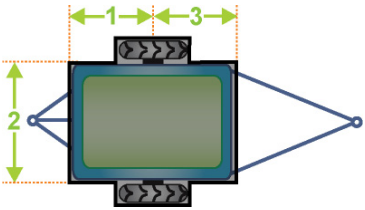
Icon Measurement	Value
1. Back of vehicle to rear axle centreline.	
2. Vehicle body width.	
3. Rear axle centreline to flow point.	

Self Propelled Sprayer – Four Wheel Steer		
	Physical Measurement	Value
	1. Flow point to half way between steered wheels.	
	2. Half way between steered wheels to GPS antenna.	
	3. Vehicle centreline to GPS antenna. If GPS antenna is left of the centreline then enter value as a negative.	
	Icon Measurement	Value
	1. Flow point to half way between steered wheels. Same value as Physical Measurement 1 above.	
	2. Vehicle body width.	
	3. Half way between steered wheels to front of vehicle.	

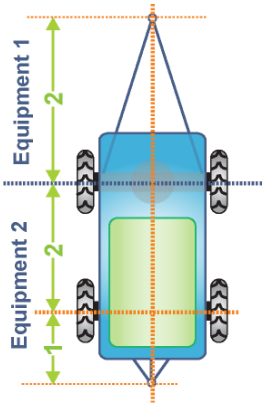
Self Propelled Combine Harvester		
	Physical Measurement	Value
	1. Cutter bar to front axle centreline. Value should be entered as a negative.	
	2. Front axle centreline to gps antenna. If GPS antenna is behind front axle centreline then enter value as a negative.	
	3. Cutter bar centreline to GPS antenna. If GPS antenna is left of the cutter bar centreline then enter value as a negative.	
	Icon Measurement	Value
	1. Back of vehicle to front axle centreline.	
	2. Vehicle body width.	
	3. Front axle centreline to front of vehicle.	

Tow Behind Boom		
	Physical Measurement	Value
	1. Flow point to axle centreline.	
	2. Axle centreline to hitch point.	
	Icon Measurement	Value
	1. Flow point to axle centreline. Same value as Physical Measurement 1 above.	
	2. Trailer body width.	
	3. Axle centreline to front of trailer.	

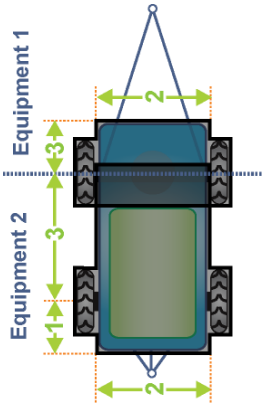
Tow Behind Boom - Steered		
	Physical Measurement	Value
	1. Flow point to half way between tractor rear wheels & boom axle centreline.	
	2. Half way between tractor rear wheels & boom axle centreline to hitch point.	
	Icon Measurement	Value
	1. Flow point to half way between tractor rear wheels & boom axle centreline. Same value as Physical Measurement 1 above.	
	2. Trailer body width.	
	3. Half way between tractor rear wheels & boom axle centreline to hitch point. Same value as Physical Measurement 2 above.	

Tow Between Tank or Air Cart		
	Physical Measurement	Value
	1. Rear hitch point to axle centreline.	
	2. Axle centreline to front hitch point.	
	Icon Measurement	Value
	1. Back of trailer to axle centreline.	
	2. Trailer body width.	
	3. Axle centreline to front of trailer.	

Trailer with Front Pivoting Axle



Physical Description	Value
Equipment 1 – Front Half	
1. Enter value as zero.	0
2. Front axle centreline to front hitch point.	
Equipment 2 – Rear Half	
1. Rear hitch or flow point to rear axle centreline.	
2. Rear axle centreline to front axle centreline.	

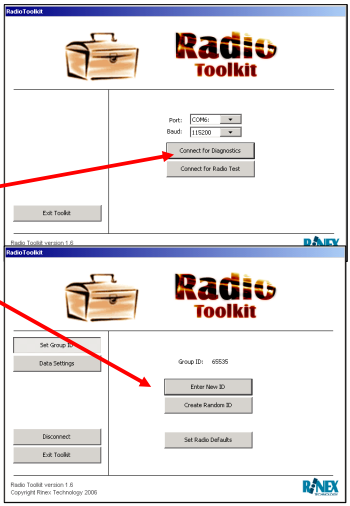


Icon Measurement	Value
Equipment 1 – Front Half	
1. Enter value as zero.	0
2. Trailer body width.	
3. Front axle centreline to front of trailer.	
Equipment 2 – Rear Half	
1. Rear axle centreline to back of tractor.	
2. Trailer Body width. Same as value 2 above.	
3. Rear axle centreline to front axle centreline.	

15.2 Setting the FieldNET Radio Group ID

If radio interference is experienced when using FieldNET, the Group ID may need to be changed. If changing the Group ID on one radio then all radios that are intended to work together must be changed to match.

1. Start the iNEX into Launcher mode (see 12.1 Starting Up in Launcher Mode).
2. Press **UTILITIES**.
3. Enter **123** and press **OK**.
4. Press **RINEX TOOLS**.
5. Press **RADIO TOOLKIT**.
6. Press **CONNECT FOR DIAGNOSTICS**.
7. Press **CREATE RANDOM ID** or press **ENTER NEW ID** and enter the required Group ID value.



15.3 GPS Receiver Settings

15.3.1 NMEA-0183 (Serial)

Messages Required:

- GPGGA @ 5Hz

Baud Rate:

- 4800, 9600 or 19200 (Default 19200)

Note: Receive baud rate can be configured on the GPS Setup screen (see section 7.2 Setting the GPS Source Options).

15.3.2 NMEA-2000 (CANbus)

Messages Required:

- POS @ 5Hz

Baud Rate:

- 250kbs

Note: J1939 Velocity (VEL) message must be turned off.

15.4 Connection Pin Assignments

Port A

Pin	Function
1	-
2	Receive Data (RxD)
3	Transmit Data (TxD)
4	Data Terminal Ready (DTR)
5	Data Drain (GND)
6	Data Set Ready (DSR)
7	Request to Send (RTS)
8	Clear to Send (CTS)
9	-

Port B

Pin	Function
1	-
2	Receive Data (RxD)
3	Transmit Data (TxD)
4	-
5	Data Drain (GND)
6	-
7	-
8	-
9	-

CANbus

Pin	Function
1	-
2	CAN A Low
3	CAN A Drain
4	-
5	-
6	-
7	CAN A High
8	-
9	-

Power Input

Pin	Function
1	Battery Negative
2	Vehicle Ignition Sense Input
3	Battery Positive For AS310 High Current
4	Battery Positive