IC34 SPRAYER JOB COMPUTER

USER MANUAL

Target Rate [GPA]   19.2
Tank Volume [Gal]   1083
Active Nozzle   XR8005(brown)
Active Counter   1
Active Counter Summary:
Area Applied [Ac]   36.57
Volume Applied [Gal]   740
    0:26

Software version 1.16 - 1.19

TeeJet ®
TECHNOLOGIES

ISBUS
TeeJet ®

A Subsidiary of **Spraying Systems Co.**®

Table of Contents

INTRODUCTION

OPERATION

TC/TRIP

FOLDING

TRANSPORT

SETUP

APPENDIX

INTRODUCTION

OPERATION

TC/TRIP

FOLDING

TRANSPORT

SETUP

APPENDIX

ISOBUS Job Computer: IC34 Sprayer

INTRODUCTION

OPERATION

TC/TRIP

FOLDING

TRANSPORT

SETUP

APPENDIX

CHAPTER 1– INTRODUCTION

Congratulations on the purchase of your new IC34 ECU built on the ISOBUS architecture. When used within the guidelines of this manual, the IC34 controller will be a reliable application tool. This manual covers the Sprayer functions of the IC34 ECU.

Use with your existing universal terminal (UT)

- Works seamlessly and displays on any ISOBUS UT
- Easy navigation menu and data rich display
- IC34 Sprayer ECU suitable for use with liquid fertilizer
- Automatic boom section control
- Variable rate control available providing your UT has GNSS and task control capability
- Add additional ISOBUS ECUs as your needs change
- Provides advanced rate control
- Standardized plugs, cables and software simplify installation and connectivity. IC34 ECU resides on the implement, reducing hardware in the cab

Figure 1-1: IC34 Job Computer

OPTIONAL SYSTEM COMPONENTS

ISOBUS Switchbox

Manual and automatic 15 section control as well as hydraulic/electrical functions. Switch box offer nine (9) section switches. In case of more sections they will automatically be distributed across the nine (9) switches. Automatic section control will always offer automatic control of the individual sections. Hydraulic functions can be defined by the OEM and distributed across nine (9) switches / 18 positions with dual levels to obtain as many as 36 functions.

Figure 1-2: Switchbox – Nine (9) sections and master output
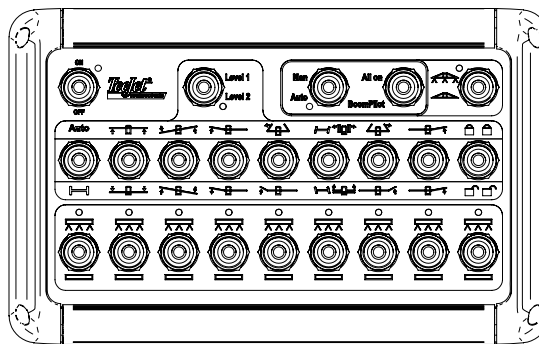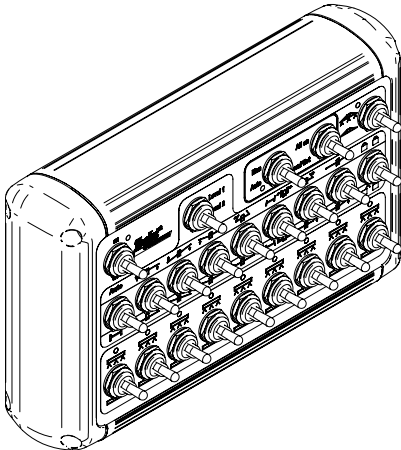
Figure 1-3: IC34 System Diagram
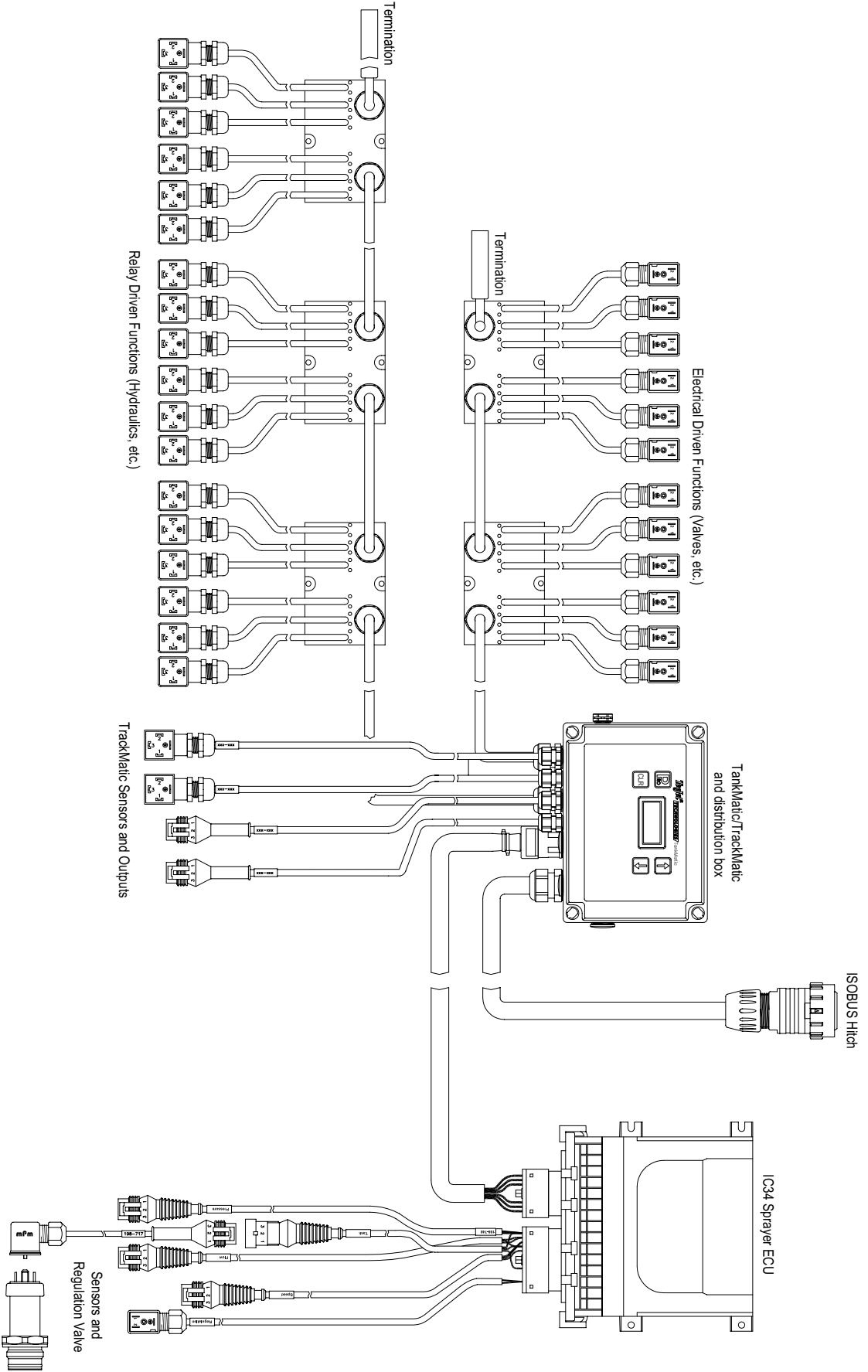
NOTE: IC34 System setup may vary from example shown.

Termination

Relay Driven Functions (Hydraulics, etc.)

Termination

Electrical Driven Functions (Valves, etc.)

TrackMatic Sensors and Outputs

TankMatic/TrackMatic and distribution box

ISOBUS Hitch

IC34 Sprayer ECU

Sensors and Regulation Valve

START UP

Power is continuously supplied to the job computer. The universal terminal (UT) will give access to the job computer options and operation.

- A firm touch is required when selecting a screen icon.
- Settings are NOT automatically saved when selected. The ACCEPT KEY ✅ must be selected to save the setting. Select the ESCAPE KEY ❌ to escape without saving settings and return to the previous menu.
- The console needs to be cycled off and back on when changing or attaching equipment to the system.
- The menu structure on your display might vary from the one displayed in this user manual depending on the universal terminal being used.

HOME SCREEN

The Home screen gives access to the IC34's available functions. Power is continuously supplied to the job computer. The universal terminal will give access to the job computer options and operation.

NOTE: Information on the ECU will vary depending on the parameters set by the user and the OEM.

Figure 1-4: Home Screen

Key/Button		Description
Available ECUs (image varies depending on systems available)		Systems currently available on your UT are displayed in the left hand column of every page. To navigate between systems simply press the icon to open the desired system.
	Operation Mode	Accesses the working aspects of the IC34 including boom section control, rate control and trip/count/application information.
	Folding Mode	Controls boom folding options.
	Transport Mode	Locks all spray and hydraulic functions to prevent accidents.
	Main Setup Mode	Menu to input various spray settings.
	Regulation Mode	Switch between automatic or manual regulation modes. A green dot indicates the current selection.
	Toggle Preset Target Rate	Toggle between established target application rates. *NOTE: Preset application rates can be entered in the Job Parameters Menu.* *SHORTCUT: While in Operation mode, press target rate on the touch screen to change preset target rates.*
	Trip Toggle (+)	Use to select an increasing Active Trip Count number. *NOTE: Trip specific settings can be entered in the Job Parameters Menu.*
	Trip Toggle (-)	Use to select a decreasing Active Trip Count number. *NOTE: Trip specific settings can be entered in the Job Parameters Menu.*
Quick View		Information displayed is based on the Current Active Trip

OPERATION MODE

Information on the Operation screen will vary depending on the parameters set by the user and the OEM.

Figure 1-5: Operation Mode Screen Overview

Alert Warning	Applied Volume
Active Trip	Applied Area
TrackMatic State	Target Rate Indicator
Speed/Application Information	Target Rate Percentage Increase/Decrease
Remaining Tank Contents	Application Rate
Density	Flow Based or Pressure Based
Shortened Sections	Agitation
Edge/Fence Row Nozzles	Circulation
Droplet Size	Foam Markers
Recommended Pressure Range	Boom Lock
Working Pressure Scale	Boom Sections
	Nozzle Type
	Current Working Pressure

Figure 1-6: Automatic Mode – Soft Key Page One (1)

- Next Page
- Toggle Speed/Application Information
- Agitation On/Off
- Density On/Off
- Regulation Mode
- Master Valve Start/Stop
- Toggle Preset Target Rates
- Automatic Mode Boost/Step % Increase
- Automatic Mode Boost/Step % Decrease
- Automatic Mode Boost/Step % Reset
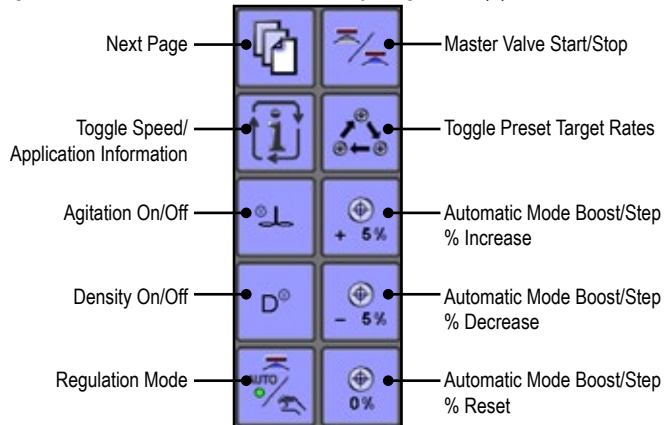
Figure 1-7: Automatic and Manual Mode – Soft Key Page two (2)

- Home
- Simulate Speed On/Off
- Simulate Speed Low/High
- Boom Lock
- Boom Unlock
- Shortened Section On/Off
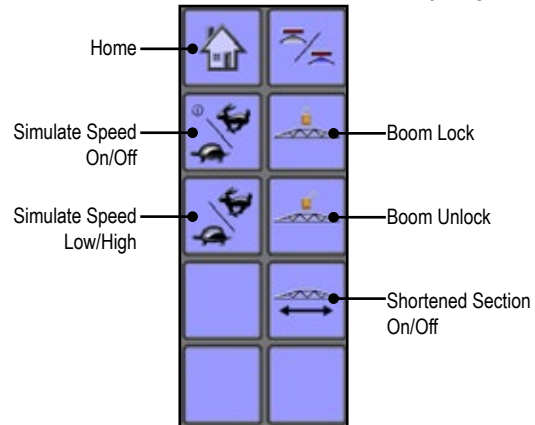
Figure 1-8: Manual Mode – Soft Key Page

- Manual Mode Regulation Valve Open (flow and pressure will increase)
- Manual Mode Regulation Valve Close (flow and pressure will decrease)
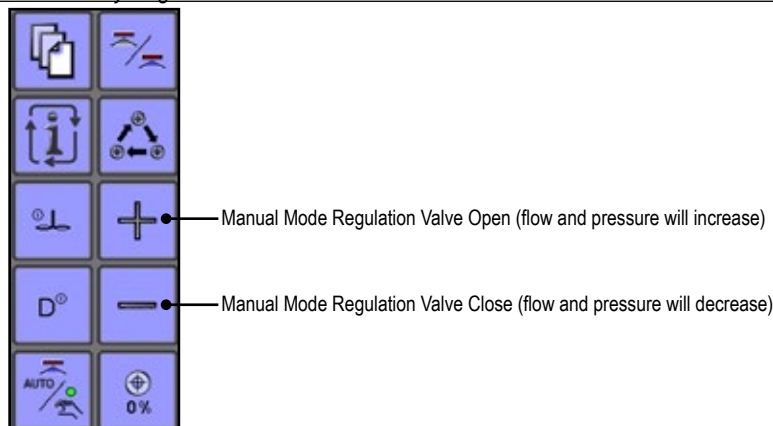
MAIN SETUP SCREEN

The main setup menu contains six options. Each of these options either directly access settings or additional menus.

Figure 1-9: Main Setup Screen

Home Key
Back One Screen
Forward One Screen
Up One Selection
Down One Selection
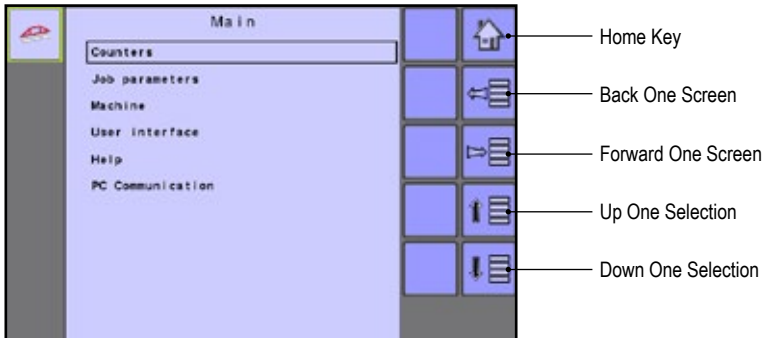
The table below outlines the additional menus and directs you to the setup pages for further information.

MENU STRUCTURE TABLE

Counters	Job Parameters	Machine	User Interface	Help	PC Communication
▶ Trip		▶ Filling		▼ Diagnostic	
▶ Campaign		▶ Operation		▶ Test Input	
▶ Total		▼ Implement Parameters		▶ Test Output	
▶ Export		▶ Section Width		▶ PowerLink+	
		▶ Nozzle Preset Setup		▶ UT	
		▶ Regulation Parameters		▶ TECU	
		▶ Shortened Sections		▶ About	
		▼ Calibrations			
		▶ *Flow Sensor			
		▶ *Liquid Pressure Sensor			
		▶ Implement Speed Sensor			
		▶ *Fill Flow Sensor			
		▶ *Tank Level Sensor			
		▶ *Wind Speed Sensor			
		▶ Alarm Configuration			
		▼ OEM			
		▶ Sensor Presence			
		▶ Implement Parameters			
		▶ Implement Geometry			
		▶ Valve Setup			
		▶ Tank Setup			
		▶ TrackMatic			
		▶ Regulation Details			
		▶ Clear Total Counters			
		▶ Factory Settings			
		▶ PowerLink+			
		▶ Use 3rd Party UT			

The OEM setup menu is password protected and the settings in this menu are directly related to the fitted OEM equipment.

*Menu settings directly related to OEM equipment.

SETTING OPTIONS NAVIGATION

Figure 1-10: Enter Selection Screens

Available Selections

Up One Selection

Accept

Escape

Down One Selection

Range Maximum

Range Minimum

Zoom In

Zoom Out

Open Number Pad

Selection

Slide Bar with Decrease One Selection and Increase One Selection Arrows

Accept

Escape

Number Pad

Close Number Pad
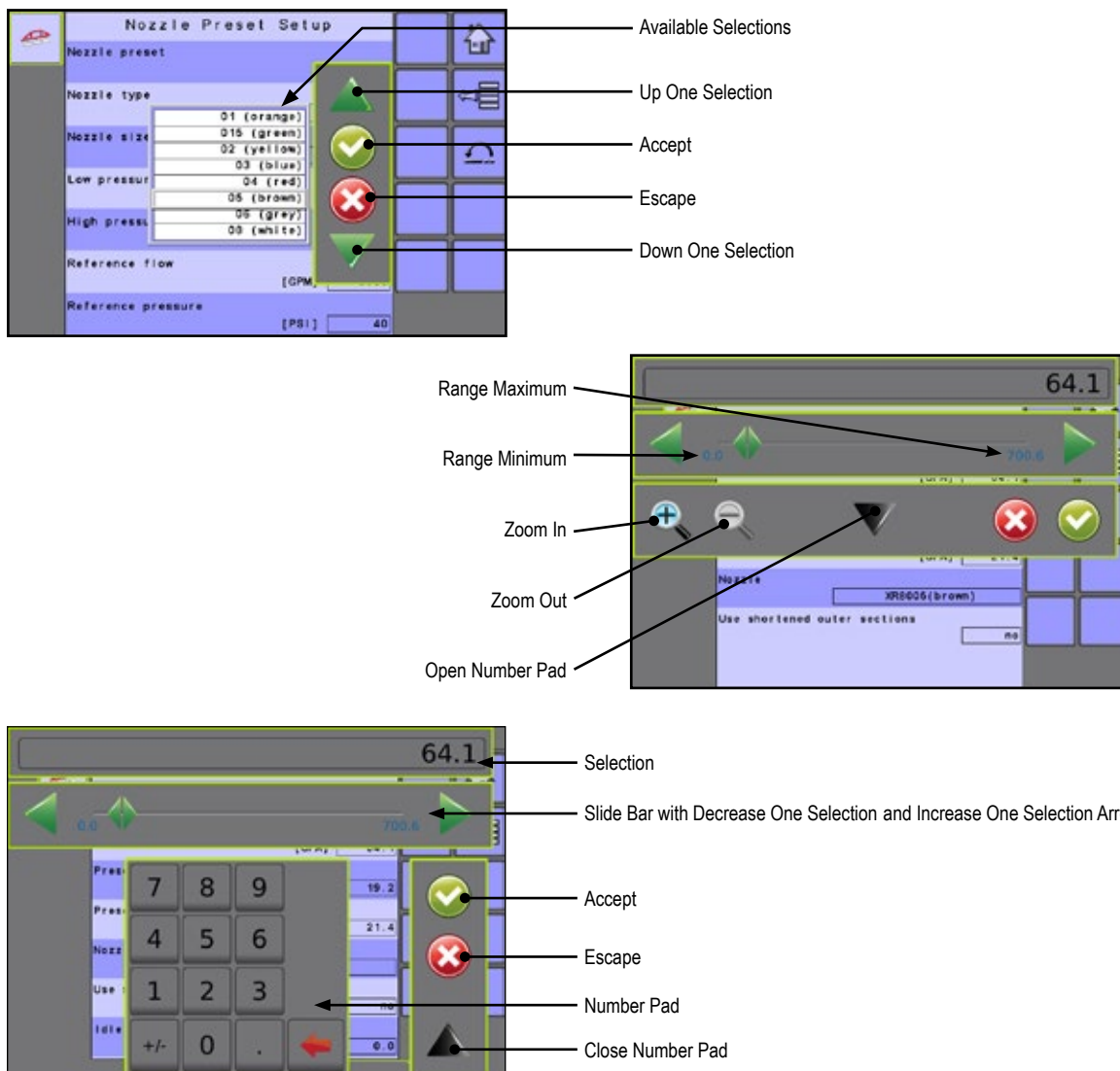
Section or Icon	Description	Section or Icon	Description
Selection	Displays the current or new selection	Open Number Pad ▼	Maximizes the number pad
Slide Bar	Selects the setting by pressing and releasing on the slide bar or pressing and dragging the Slider to a designated value. Range for a specific setting is displayed on the slide bar.	Close Number Pad Key ▲	Minimizes the number pad
		Accept Key ✓	Accepts the new selection
		Escape Key ✕	Escapes without saving changes
		Up One Selection Arrow ▲	Highlights the selection above
		Down One Selection Arrow ▼	Highlights the selection below
Slider ◀▶	Slide to the left to decrease or right to increase the selection	Zoom In 🔍 🔍	Narrows slide bar range. Gray = maximum zoom level.
Increase One Selection Arrow ▶	Increases the setting		
Decrease One Selection Arrow ◀	Decreases the setting	Zoom Out 🔍 🔍	Expands slide bar range. Gray = minimum zoom level.
Number Pad	Use the numbers to set the selection value		

CHAPTER 2 − OPERATION MODE

The Operation Screen accesses the working aspects of the IC34 including boom section control, rate control and trip/count/application information.

NOTE: Settings are automatically saved when selected.

NOTE: The menu structure on your display might vary from the one displayed in this user manual depending on the universal terminal being used.

AUTOMATIC OR MANUAL REGULATION MODE

There are two types of Regulation Mode - Automatic and Manual.

• On the Home Screen 🖳 or Operation Screen 🖳, establish Automatic Operation Mode or Manual Operation Mode by pressing the REGULATION MODE KEY 🖳 so that the green dot is on AUTO (automatic) or the hand (manual) accordingly.

Automatic Regulation Mode

The system will adjust the application rate based on the vehicle speed and active boom width in use for the current the target rate.

• The target rate can be adjusted using the BOOST/STEP % INCREASE/DECREASE KEYS 🖳 🖳 on the Operation Screen. Preset Application Rates define up to three (3) target rates for product being applied per hectare/acre. These can be toggled using the TOGGLE PRESET TARGET RATE KEY 🖳 on the Operation Screen or Home Screen.

Manual Regulation Mode

Retains an established regulation valve setting regardless of speed. The regulation valve setting can be adjusted using the REGULATION VALVE OPEN/CLOSE KEYS 🖳 🖳 on the Operation Screen.

Figure 2-1: Regulation Mode on Home Screen
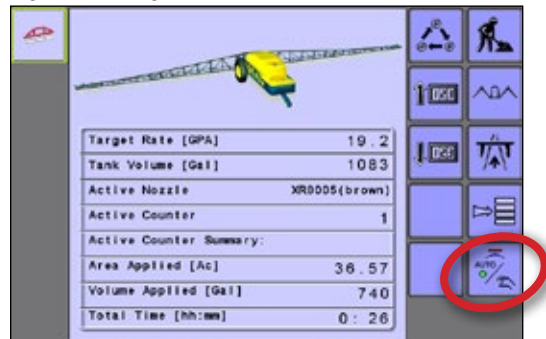
Figure 2-2: Regulation Mode on Operation Screen

OPERATION MODE OVERVIEW

Information on the Operation screen will vary depending on the parameters set by the user and the OEM.

Figure 2-3: Operation Mode Screen Overview

Figure 2-4: Automatic Mode – Soft Key Page One (1)

Figure 2-5: Automatic and Manual Mode – Soft Key Page two (2)

Figure 2-6: Manual Mode – Soft Key Page
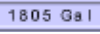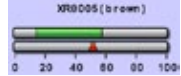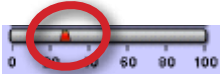
Table 2-1: Key/Button Descriptions

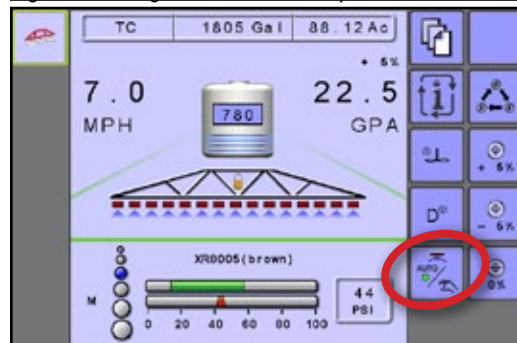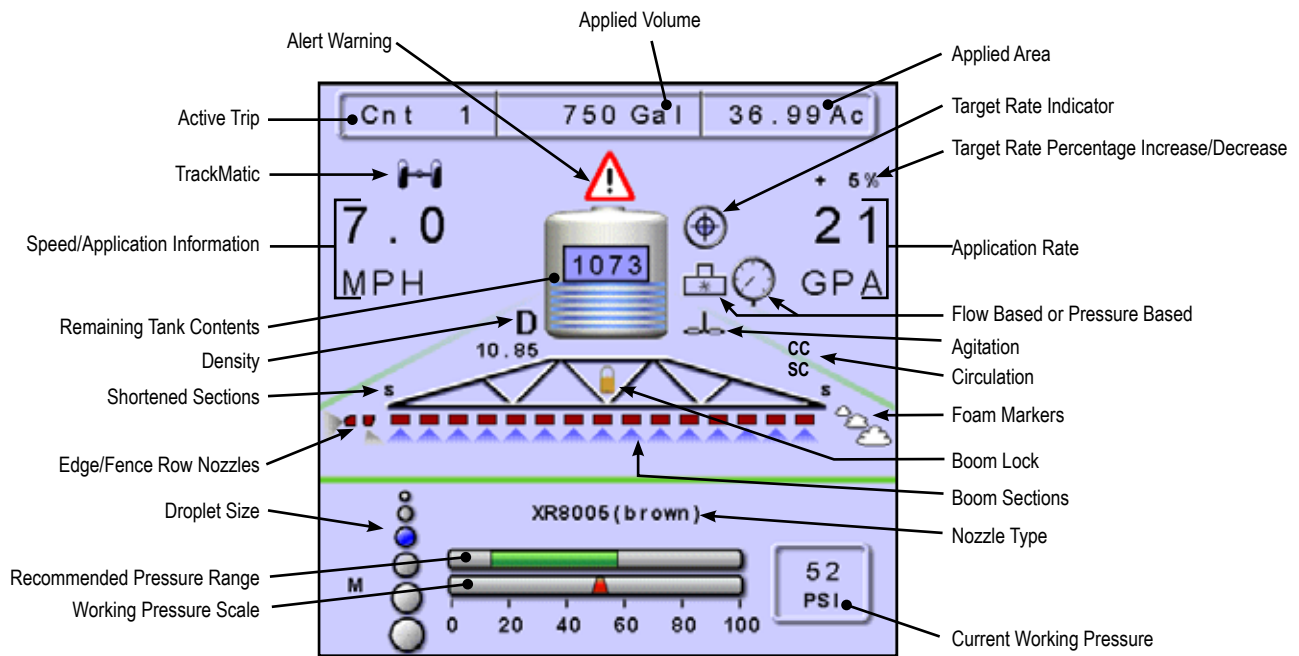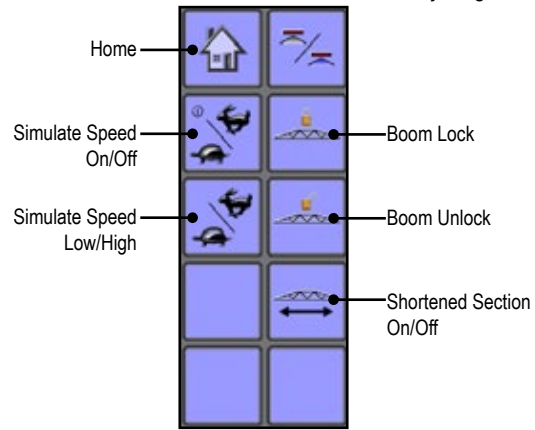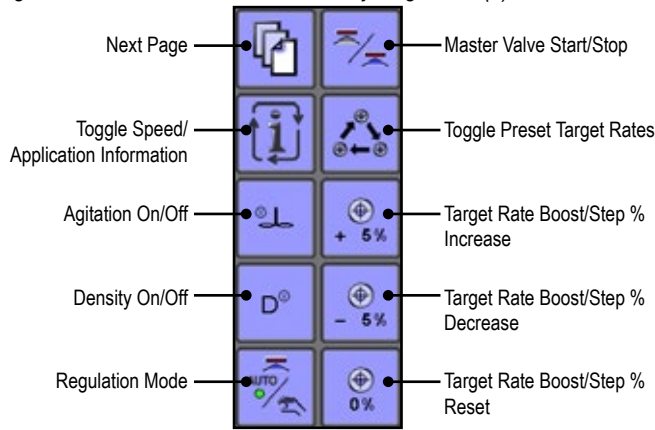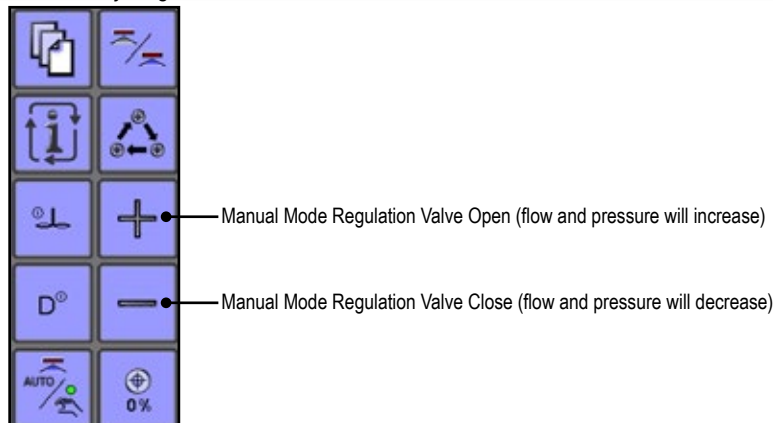| Key/Button			Description	
		Next Page	Press to toggle between soft key options and pages.	
			NOTE: Some of the setting menus contain several pages.	
		Information	Press to toggle between display modes.	
		Agitation On/Off	Press to start or stop agitation.	
		Density Factor	Press to initiate preset fertilizer density setting or return to water density.	
			SHORTCUT: Press the tank icon on the Operation screen to enter the Density setting.	
		Regulation Mode	Press to toggle between automatic and manual regulation modes. A green dot indicates the current selection.	
			Automatic Regulation Mode automatically adjusts the application rate based on the current speed in reference to the target rate.	
			NOTE: Target Rate Boost/Step Percentage can be defined under Main -> Machine -> Operation -> Application Rate Step.	
			Target Rate Boost/Step Percent Increase	Establish the required boost percentage step, i.e. the step size, at which the application rate is to increase/decrease with the boost function.
			Target Rate Boost/Step Percent Decrease	
			Target Rate Boost/Step Percent Reset.	Reset the boost percentage step back to zero (0) percent.
			Manual Regulation Mode will retain an established regulation valve setting regardless of speed.	
			Regulation Valve Manual Open – opens the valve to increase pressure	
			Regulation Valve Manual Close – opens the valve to decrease pressure	
		Master Valve Start/Stop	Press to start or stop application. Not available if a switch box is connected.	
		Toggle Preset Target Rates	Press to toggle between established target application rates.	
			NOTE: Preset application rates can be entered in the Job Parameters Menu.	
			SHORTCUT: Press the target rate on the Operation Screen to change preset target rates.	
		Home	Press to return to the Home Screen	
		Simulate Speed On/Off, Low/High	User can predefine two simulated speeds in operation menu	
		Boom Lock/Unlock	Soft keys to lock or unlock the boom	
		Shortened Section On/Off	Provides the operator the ability to turn off nozzles on the most left and most right section.	
		Boom Sections On/Off	Press to turn on sections to left , turn off sections from left , turn on sections to right or turn off sections from right	

Table 2-2: Section/Icon Descriptions

Section/Icon	Description	
Active Trip Information	This information bar displays the Active Trip Count number, Applied Volume and Applied Area.	TC | 1805 Gal | 88.12 Ac
Active Trip	Trip Mode – connected to an ISOBUS CAN with only a UT device found, the current active trip or job number will be displayed `Cnt 1` . Task Controller (TC) Mode – connected on an ISOBUS CAN with a TC device found, then TC will be displayed `TC` .	
Applied Volume	Displays volume applied.	1805 Gal
Applied Area	Displays applied area.	88.12 Ac
Speed/Application Information	Displays vehicle speed, volume per minute, area left in tank, area per hour, time sprayed and actual working width. The INFORMATION KEY [i] toggles between display modes.	
Remaining Tank Contents	Displays the remaining tank content. *NOTE: If no tank sensor is fitted or the contents are not entered in the Tank Filling Menu prior to spraying, Tank Contents may not display the correct amount.* *SHORTCUT: Press the Tank icon on the Operation Screen to enter the Tank Filling menu.*	1073
Application Rate	Displays the actual application rate per hectare/acre. *NOTE: When the Master is "On" the actual application rate per hectare/acre will be displayed. When the Master is "Off" the target rate is displayed and the TARGET RATE ICON ⊕ appears.* *SHORTCUT: Press the actual rate on the Operation Screen to change the application rate.*	
Target Rate Boost/Step Percentage Increase/ Decrease	Displays Boost Percentage Step, i.e. the step size, at which the application rate is to increase/decrease with the boost function.	+ 10% 231
Alert Warning	Displayed if an alarm condition is active.	⚠
TrackMatic	Displays if a TrackMatic system is installed.	⊢•⊣
Flow Based/Pressure Based	These symbols will only appear if both a flow sensor and a pressure sensor are installed.	
(flow icon)	Flow Based – displayed if regulation is based on flow.	
(pressure icon)	Pressure Based – displayed if regulation is based on pressure.	
Agitation	Displayed if an agitation valve is installed. Agitation ON (icon) , Agitation OFF (icon) .	
Circulation	If Circulation is installed and selected in the OEM Menu, "SC" (Semi Circulation) or "CC" (Full Circulation) will be displayed.	CC SC
Density	Displays a "D" and the Density rate to the left of the Tank icon if the density is set to "Fertilizer" instead of water. *SHORTCUT: Press the Tank icon (icon) for access to Density settings in the Tank filling menu.*	D 10.85

Section/Icon	Description	
Boom Sections	Displays the active and inactive boom sections as well as if they are on (spray is blue) or off (spray is gray). *NOTE: The color on the boom sections indicates the color of the selected nozzle type.*	
Edge / Fence Row	Indicates an extra nozzle for Edge or Fence row spraying is installed on the machine.	
Shortened Sections	Capability to turn off an amount of nozzles on the most left and most right sections. *NOTE: Applies to both left and right sections, it is not possible to work with a single shortened section.*	
Boom Transport Mode	An indication if the boom is locked or unlocked.	
Foam Markers	Indicates foam markers are active.	
Nozzle Information	This information section displays the nozzle type, recommended pressure range, current working pressure and high pressure limit.	
Nozzle Type	Displays the selected nozzle type. *SHORTCUT: Press the current selected nozzle text on the Operation Screen to change nozzle type.*	
Recommended Pressure Range	Displays the recommended pressure range for the selected nozzle (the green area indicates the pressure range). The pressure range will change depending upon the selected nozzle. ***IMPORTANT! ALWAYS REFER TO THE RECOMMENDED PRESSURE RANGE AS FAILURE TO DO SO MAY RESULT IN UNEVEN SPRAY PATTERNS.***	
Working Pressure Scale	Displays the working pressure scale with current pressure indicator. *NOTE: Working pressure should not exceed the recommended pressure range.* ***IMPORTANT! ALWAYS REFER TO THE RECOMMENDED NOZZLE PRESSURE VALUES WHEN SETTING NOZZLE PRESSURE.***	
Current Working Pressure	Displays the current working pressure.	
Droplet Size	Indicates the actual droplet size based on the selected nozzle and the actual working pressure.	

APPLICATION RATE OPTIONS

Target Rate

Preset Application Rates define up to three (3) target rates of product being applied per hectare/acre. These settings will set the same for all active trips. Target rates set to "0.0" will not be included in the Toggle Preset Target Rate options. These options can be toggled using the TOGGLE PRESET TARGET RATE KEY ⬜ on the Operation Screen or Home Screen.

SHORTCUT: Press the actual rate on the Operation Screen to change the application rate.

Figure 2-7: Target Application Rate in Operation Mode
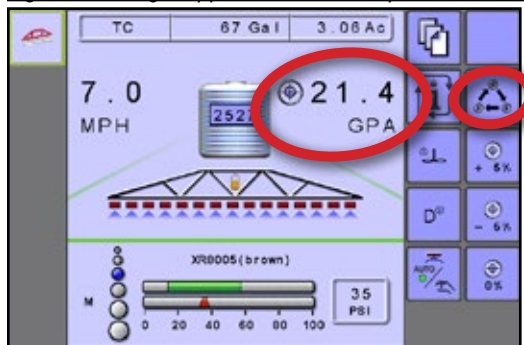
Figure 2-8: Target Application Rate on Home Screen
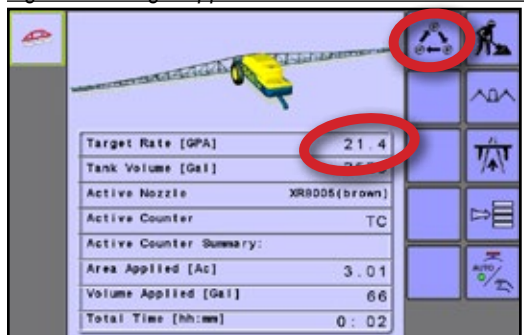
Target Rate/Step Percentage Increase/Decrease

The Target Rate Percentage Increase/Decrease Keys adjust the application target rate per the established percentage set in the Machine Operation Setup Screen under Application Rate Step. Automatic Regulation Mode will automatically adjust the application rate based on the current speed in reference to the target rate.

• To adjust the Target Rate, press the BOOST/STEP % INCREASE/DECREASE KEYS ⬜ ⬜ or RESET KEYS ⬜ .

Figure 2-9: Target Rate Percentage Increase/Decrease
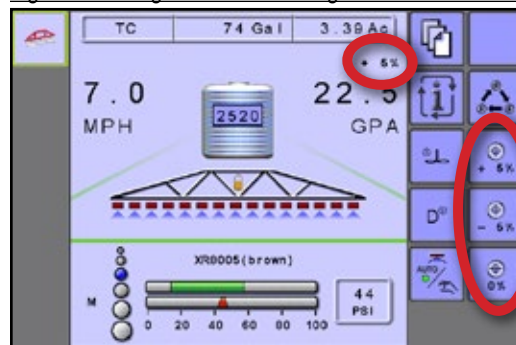
Regulation Valve Manual Open/Close

The regulation valve setting can be adjusted manually using the Regulation Valve Open/Close Keys on the Operation Screen. Manual Regulation Mode will retain an established regulation valve setting regardless of speed.

• To adjust the regulation valve setting, press the REGULATION VALVE OPEN/CLOSE KEYS ⬜ ⬜ .

Figure 2-10: Manual Regulation Valve Open/Close
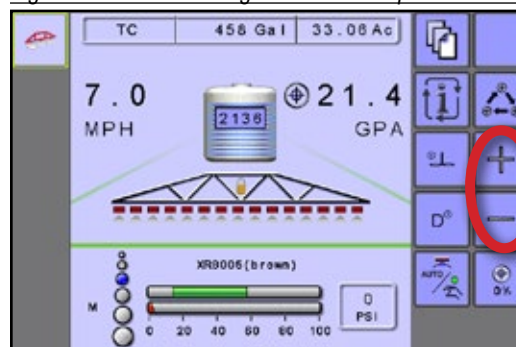
BOOM SECTIONS

Boom Sections represents the active ▬ and inactive ▬ boom sections as well as if they are on ▲ (spray is blue) or off ▲ (spray is gray).

Figure 2-11: Boom Sections
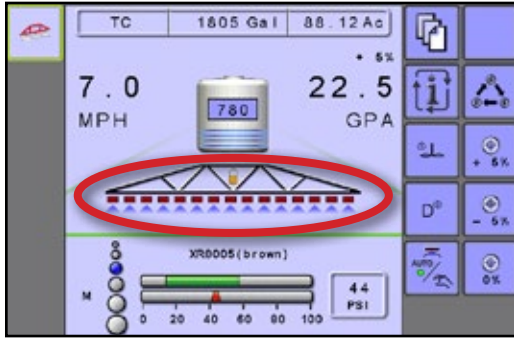
The color on the boom sections indicates the color of the selected nozzle type.

Established Nozzle Capacities and Colors			
Size	**Color**	**Size**	**Color**
01	Orange	06	Gray
015	Green	08	White
02	Yellow	10	Light Blue
025	Purple	12	Telemagenta
03	Blue	15	Light Green
04	Red	20	Black
05	Brown	30	Beige

Start/Stop Application

Start/Stop Application is used to manage application by starting or stopping the application.

Without a Switchbox

If a switchbox is not connected for boom section control, starting/stopping application is controlled by pressing the START/STOP KEY ▧.

Figure 2-12: Application without a Switchbox

With a Switchbox

If a switchbox is connected for boom section control, starting/stopping application will be controlled by the switchbox.

Figure 2-13: Application with a Switchbox
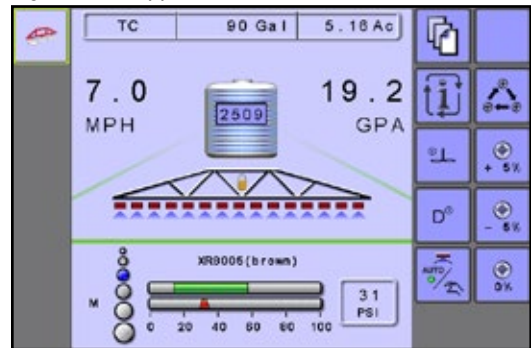
Boom Sections On/Off

Boom Sections On/Off is used to control boom sections from the left or right.

Without a Switchbox

- To adjust the sections on the left, press the LEFT BOOM SECTIONS ON/OFF KEYS ⟪ ⟫ .
- To adjust the sections on the right, press the RIGHT BOOM SECTIONS ON/OFF KEYS ⟫ ⟪ .

Figure 2-14: Operations Screen without Switchbox

Figure 2-15: Boom Sections

Boom Sections Off
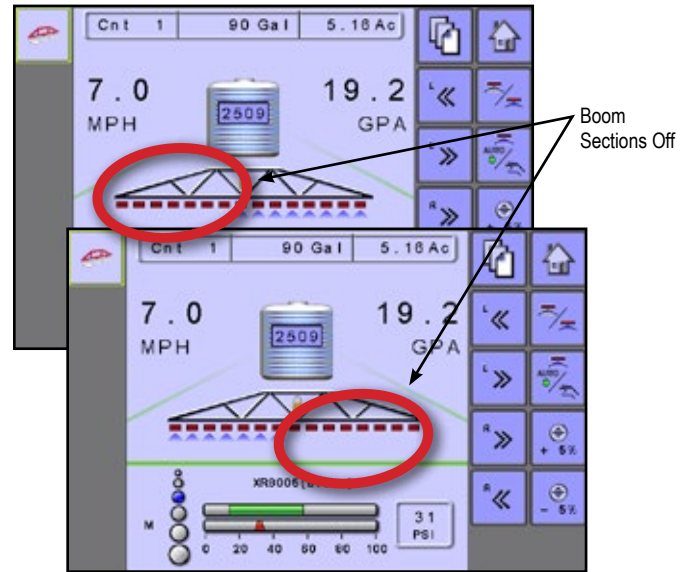
With a Switchbox

The console operates with nine (9), section switches. Each section switch is associated with one of up to the same number of sections on the boom and illustrated on the Operation screen. The console is capable of supporting up to 15 boom sections. The boom sections are paired across the nine (9) switches evenly but will work as individual sections in ASC mode.

NOTE: Although the Number of Sections range is up to 15, the max. number of physical switches are still nine (9).

Figure 2-16: Operations Screen with Switchbox
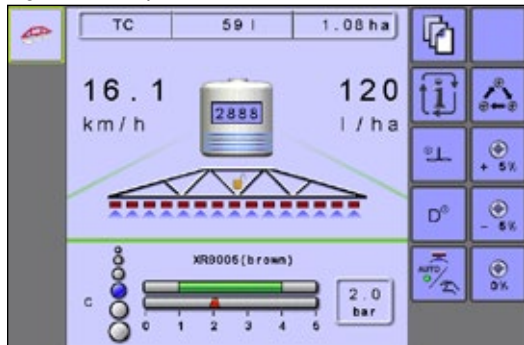
Table 2-3: Pairing Key for 9 physical section switches operating with 10, 11, 12, 13, 14 and 15 Boom Sections

Section Switches 1-9	Boom Section Pairing Greater Than 9 Boom Sections					
	10 Sections	11 Sections	12 Sections	13 Sections	14 Sections	15 Sections
1	1	1	1	1	1	1
2	2	2	2	2	2	2 and 3
3	3	3	3	3 and 4	3 and 4	4 and 5
4	4	4 and 5	4 and 5	5 and 6	5 and 6	6 and 7
5	5 and 6	6	6 and 7	7	7 and 8	8
6	7	7 and 8	8 and 9	8 and 9	9 and 10	9 and 10
7	8	9	10	10 and 11	11 and 12	11 and 12
8	9	10	11	12	13	13 and 14
9	10	11	12	13	14	15

INFORMATION

The INFORMATION KEY [i] toggles the Speed/Application Information section on the Operation Screen between the display modes.

Figure 2-17: Information

Vehicle Speed

Volume Applied Per Minute

Projected Area Per Hour

Projected Total Area Remaining

Application Time

Actual Working Width
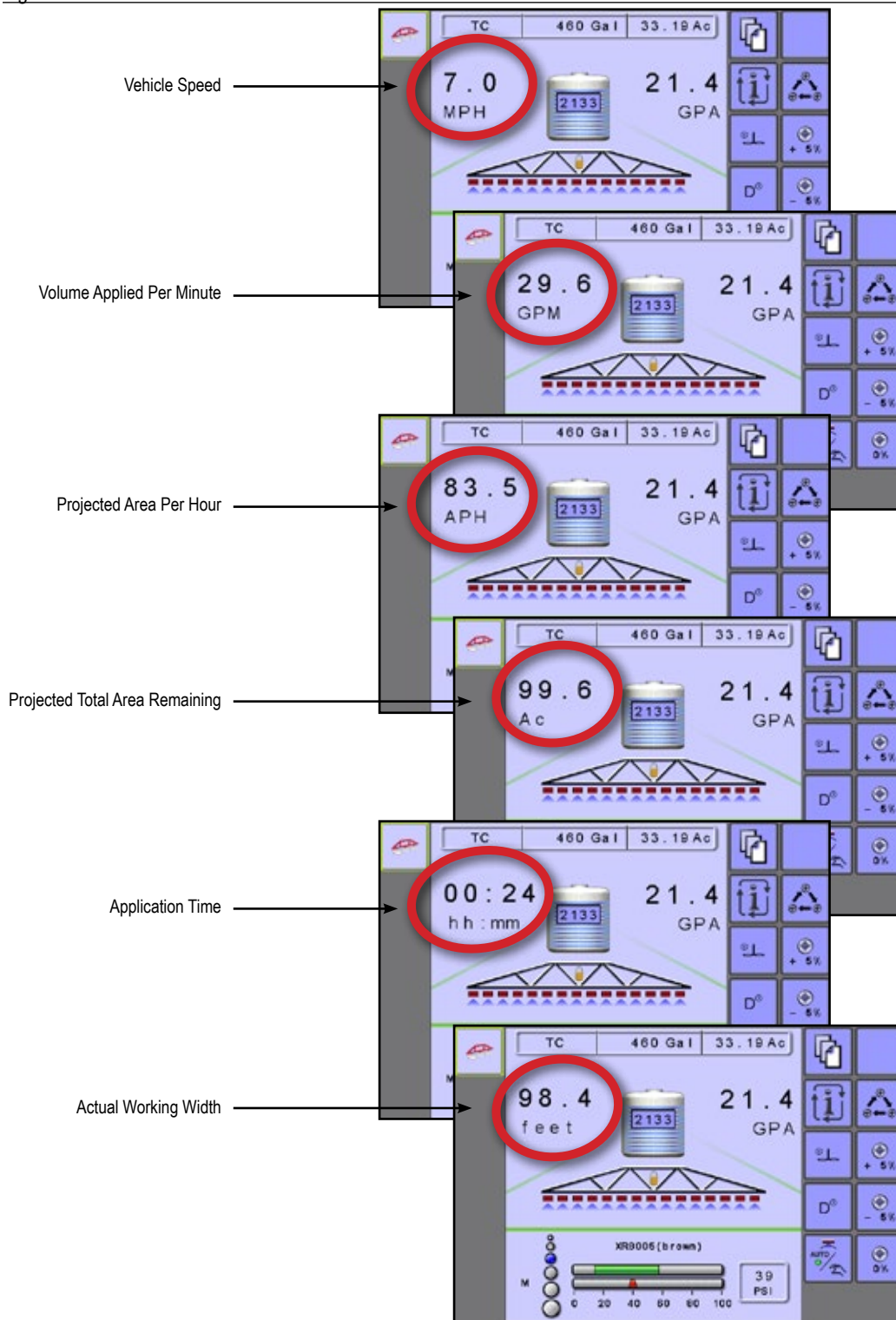
CHAPTER 3 – TRIP TOGGLE / TASK CONTROLLER

The sprayer ECU contains 16 internal Active Trip Count Numbers or can be set to Task Controller (TC) mode. Counters can be selected by pressing the Trip Counter up/down keys.

TRIP MODE

One of up to 16 Active Trip Count Numbers can be selected to view the desired trip information. The trip that is "active" is displayed/active on the Home Screen and Operation Screen.

Press the TRIP TOGGLE KEYS [icon] [icon] to toggle through the up to 16 trip count settings.

Examples may differ as this is dependant on the sprayer configuration.

Figure 3-1: Home Screen - Trip Toggle
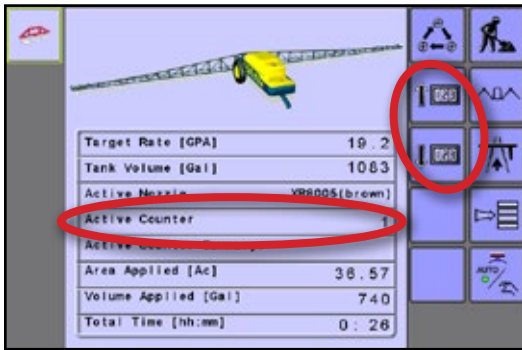
Figure 3-2: Active Trip Count Number on Operation Screen
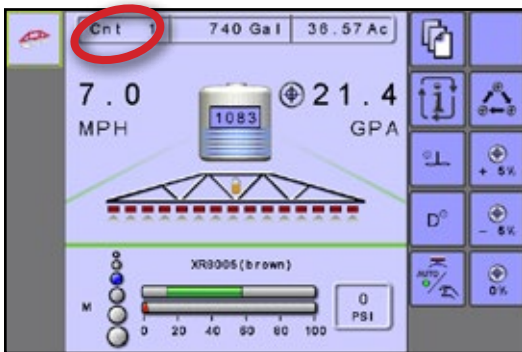
Clear Trip Counter Information

To clear information specific to an Active Trip Count Number, see Main Setup-> Counter-> Trip Counters.

NOTE: While in Task Controller (TC) mode, the internal counters will be disabled and the job toggle buttons will be hidden.

TASK CONTROLLER MODE

When using information generated from a FMIS, the job parameters will be set to Task Controller. Tasks will contain the types of information that should be logged as well as prescription maps and other information.

Figure 3-3: Home Screen – In TC Mode
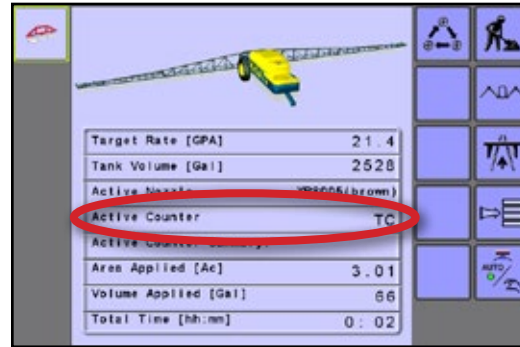
NOTE: While in Task Controller (TC) mode, the internal counters will be disabled and the job toggle buttons will be hidden.

Figure 3-4: TC on Operation Screen
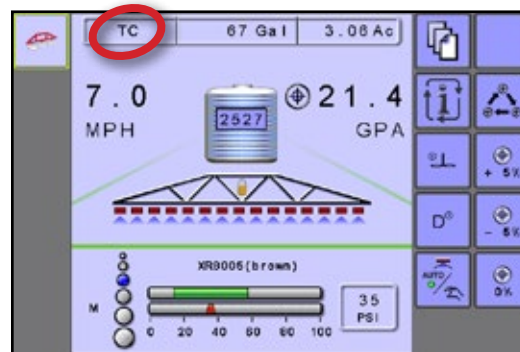
NOTE: If using a Task Controller, the Active Trip Count Number will display as "TC".

Clear Task Control Counter Information

To clear information specific to an Active Trip Count Number, see Main Setup-> Counter-> Trip Counters.

ISOBUS Job Computer: IC34 Sprayer

INTRODUCTION

OPERATION

TC/TRIP

FOLDING

TRANSPORT

SETUP

APPENDIX

CHAPTER 4 − FOLDING

The folding menu will give access to hydraulic functions which isn't available on the ISOBUS switchbox.

Folding Mode can be accessed from the Home screen by pressing the FOLDING MODE KEY . The following examples may differ as this is dependent upon sprayer configuration. Due to the variety of possible configurations, this should be used for reference purposes only.

Figure 4-1: Folding Mode on Home Screen

With a Switchbox

If a switchbox is being used to control the boom sections, folding will be controlled by the switchbox..

Figure 4-2: Folding Mode With a Switchbox

Boom Lock

Boom Unlock

Without a Switchbox

When folding without a switchbox, there are three (3) sets of options. The left and right sections are referred to as if facing in the machine's forward direction.

- Simultaneously - folding both the left and right sections at the same time; inner sections and 2nd sections can be folded separately
- Left Sections - folding only the left sections; inner section and 2nd section can be folded separately
- Right Sections - folding only the right sections; inner section and 2nd section can be folded separately

Press the TOGGLE FOLDING MODE KEY ▦ 🏠 🏠 to switch between folding mode options.

Figure 4-3: Folding Mode without Switchbox

Toggle Folding Mode – fold/unfold inner sections simultaneously

Fold inner left section

Unfold inner left section

Fold 2nd left section

Unfold 2nd left section

Toggle Folding Mode – fold/unfold inner left section

Fold inner right section

Unfold inner right section

Fold 2nd right section

Unfold 2nd right section

Toggle Folding Mode – fold/unfold inner right section

Fold inner sections simultaneously

Unfold inner sections simultaneously

Fold 2nd sections simultaneously

Unfold 2nd sections simultaneously

Tilt boom to the right

Tilt boom to the left

Boom Lock

Boom Unlock

CHAPTER 5 − TRANSPORT

While in Transport Mode, all operation functions are locked off and cannot be activated. Transport Mode displays the speed in analogue mode.

Figure 5-1: Transport Mode from the Home Screen
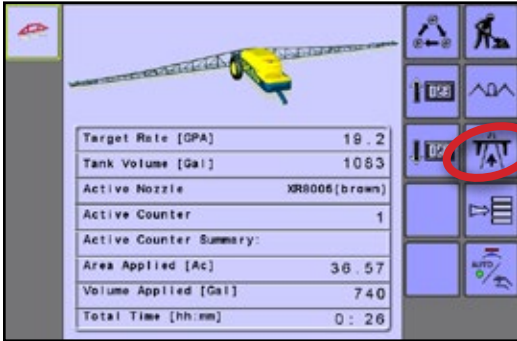
Figure 5-2: Transport Mode

Home

Speedometer

Information Box
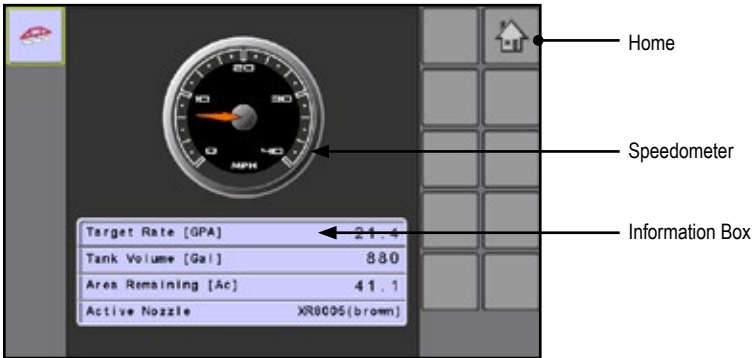
CHAPTER 6 – SETUP

The main setup menu is used to configure the console, manage the machine and its implements.

Main Menu Structure

MENU STRUCTURE TABLE					
Counters	**Job Parameters**	**Machine**	**User Interface**	**Help**	**PC Communication**
▶ Trip		▶ Filling		▼ Diagnostic	
▶ Campaign		▶ Operation		▶ Test Input	
▶ Total		▼ Implement Parameters		▶ Test Output	
▶ Export		▶ Section Width		▶ PowerLink+	
		▶ Nozzle Preset Setup		▶ UT	
		▶ Regulation Parameters		▶ TECU	
		▶ Shortened Sections		▶ About	
		▼ Calibrations			
		▶ *Flow Sensor			
		▶ *Liquid Pressure Sensor			
		▶ Implement Speed Sensor			
		▶ *Fill Flow Sensor			
		▶ *Tank Level Sensor			
		▶ *Wind Speed Sensor			
		▶ Alarm Configuration			
		▼ OEM			
		▶ Sensor Presence			
		▶ Implement Parameters			
		▶ Implement Geometry			
		▶ Valve Setup			
		▶ Tank Setup			
		▶ TrackMatic			
		▶ Regulation Details			
		▶ Clear Total Counters			
		▶ Factory Settings			
		▶ PowerLink+			
		▶ Use 3rd Party UT			

The OEM setup menu is password protected and the settings in this menu are directly related to the fitted OEM equipment.

*Menu settings directly related to OEM equipment.

Main Menu Structure Overview:

- ► Counters – access to various types of trip counters
- ► Job Parameters – configure application settings
- ▼ Machine – configure vehicle parameters
    - ► Filling – establishes actual tank content and material density.
    - ► Operation – establishes boost percentage step, speed source and simulated speed low and high levels.
    - ► Implement Parameters – establishes boom section width, nozzle preset setup, regulation parameters and size of shortened sections.
    - ► Calibrations – establishes the flow sensor, liquid pressure sensor, implement speed sensor, tank level sensor and tank fill flow sensor calibrations.
    - ► Alarm Configurations – configures system alarms for tank content minimum, agitation tank level alarm, flow/pressure cross check and wind speed limit.
    - ► OEM – Sprayer manufacture's basic settings.
- ► User Interface – choose preferred UT and nozzle settings

- ► Help – perform diagnostics and view system information
- ► PC Communication – establish a computer connection

Figure 6-1: Main Setup Screen

COUNTERS

The Counters Menu provides access to various system counters allowing the user to view, reset or export trip information.

MENU STRUCTURE TABLE

Counters	Job Parameters	Machine	User Interface	Help	PC Communication
► Trip					
► Campaign					
► Total					
► Export					

Counters Menu Structure Overview:

- ► Trip – used to display information regarding area, distance, time and amount applied
- ► Campaign – used to display information regarding area, amount applied, time and speed information for all trips made since last reset
- ► Total – used to display information regarding area, amount applied, time and speed information for all activity
- ► Export Counters – allows counter information to be exported in HTML or CSV format

NOTE: Trip Counters will not be active when using a task controller.

Figure 6-2: Counters Menu

Trip Counters

Trip Counters display information regarding area, distance, time and amount applied. The active trip counter is displayed/active on the Home Screen and Operation Screen.

- To clear current trip counters, press the SINGLE TRASH CAN KEY 🗑 to clear data from the active trip counter.

- To clear all trip counters, press the DOUBLE TRASH CAN KEY 🗑🗑 to clear data from all trip counters.

Figure 6-3: Trip Counters Menu in Trip Mode
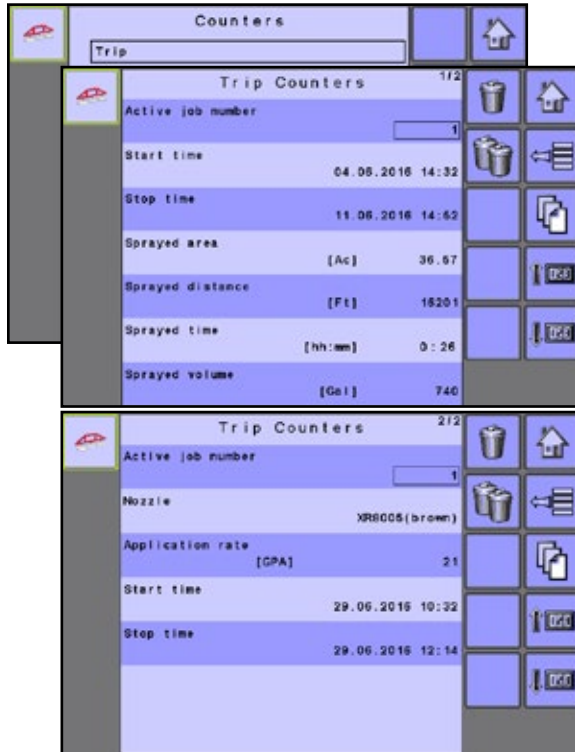
Figure 6-4: Trip Counters Menu in TC Mode

Active Job/Trip Number
One of up to 15 Active Job/Trip Numbers can be selected to view the desired trip information. The trip that is "active" is displayed/active on the Home Screen and Operation Screen.

NOTE: If using a Task Controller, the Active Trip Count will display as "0".

Start Time
Displays a time stamp for when the selected Active Trip Count Number began.

Stop Time
Displays a time stamp for when the selected Active Trip Count Number stopped.

Sprayed Area
Displays the applied coverage area for the selected Active Trip Count Number.

Sprayed Distance
Displays distance traveled for the selected Active Job.

Sprayed Time
Displays time sprayed for the selected Active Trip Count Number.

Sprayed Volume
Displays volume of material applied during the selected Active Trip Count Number.

Nozzle
Displays the nozzle selection for the selected Active Trip Count Number.

Application Rate
Displays the first target application rate for the selected Active Trip Count Number.

Trip Toggle Keys
Press the TRIP TOGGLE KEYS 🔲 🔲 to view up to 16 Trip Count Number settings.

NOTE: Trip specific settings can be entered in the Job Parameters Menu.

NOTE: Trip Toggle keys are only available in Trip Mode.

Campaign Counters

Campaign Counters display information regarding area, amount applied and time for all Active Trip Count Numbers.

- To clear the current campaign counter, press the SINGLE TRASH CAN KEY [🗑] to clear data from all Active Trip Count Numbers.

Figure 6-5: Campaign Counters
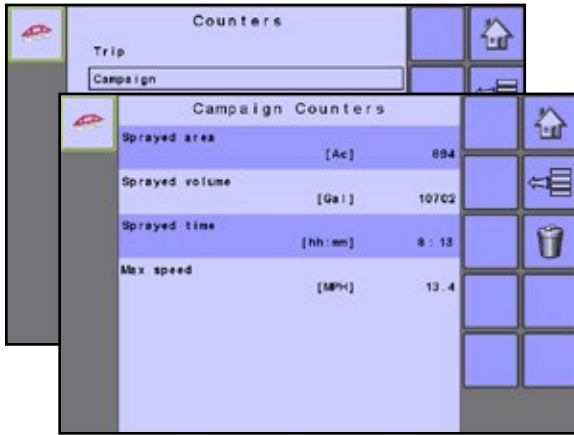
Sprayed Area

Displays total applied coverage area for all Active Trip Count Numbers since last reset of Campaign Counter.

Sprayed Volume

Displays total volume of material applied during all Active Trip Count Numbers.

Sprayed Time

Displays total time sprayed for all Active Trip Count Numbers.

Maximum Speed

Displays maximum speed recorded for all Active Trip Count Numbers.

Total Counters

Total Counters displays information regarding area, amount applied, time and maximum speed for all activity. Total Counters can only be cleared in the OEM menu.

Figure 6-6: Total Counters

Sprayed Area

Displays total applied coverage area for all Active Trip Count Numbers.

Sprayed Volume

Displays total volume of material applied during all Active Trip Count Numbers.

Sprayed Time

Displays total time sprayed for all Active Trip Count Numbers.

Maximum Speed

Displays maximum speed recorded during work and transport for all Active Trip Count Numbers.

Export Counters

Export Counters allows counter information to be exported in HTML or CSV format. HTML files can be viewed from an internet browser. CSV files can be viewed as Excel sheets. For data transfer, an optional cable is required. Contact your local dealer for additional information.

- To export a HTML file, select the HTML KEY [💾] . A confirmation screen will be displayed.
- To export a CSV file, select the CSV KEY [💾] . A confirmation screen will be displayed.

Figure 6-7: Export Counters

INTRODUCTION

OPERATION

TC/TRIP

FOLDING

TRANSPORT

SETUP

APPENDIX

ISOBUS Job Computer: IC34 Sprayer

JOB PARAMETERS

Job Parameters configures application settings.

MENU STRUCTURE TABLE

Counters	Job Parameters	Machine	User Interface	Help	PC Communication

Figure 6-8: Job Parameters
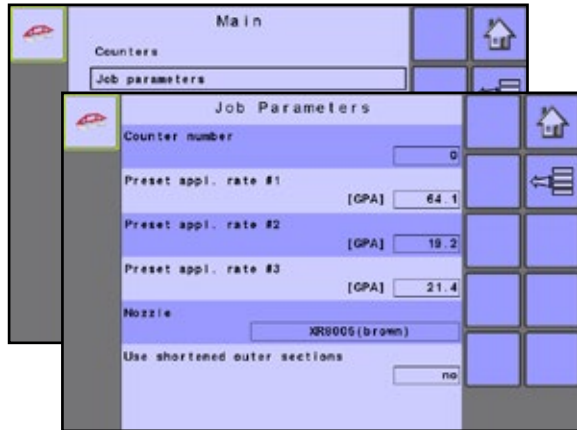
Counter Number

The current Active Trip Counter number is displayed at the top of the screen. While set as a task controller, the Active Trip Counter will display as a "0" in the Active Trip Counter number field. When acting as a stand alone, the Active Trip Counter will allow up to 16 active trip count numbers.

Preset Application Rates

Preset Application Rates define up to three (3) target rates of product being applied per hectare/acre. These settings will set the same for all active trips. Target rates set to "0.0" will not be in included in the TOGGLE PRESET TARGET RATE options on the Operation Screen or Home Screen.

Nozzle

Select one of five (5) preset nozzle types by pressing directly on the current nozzle information bar. Preset nozzle types are determined under the Machine menu then Implement Parameters. This setting will set the same for all active trips.

Use Shortened Outer Sections

Shortened sections are available for shortening the out-most left and right sections to a smaller working width than the physical size.

NOTE: Nozzles are required to be manually turned off.

Use Circulation

If Circulation is installed and selected in the OEM Menu, "SC" (Semi Circulation) or "CC" (Full Circulation) can be selected.

Figure 6-9: Job Parameters - Use Circulation
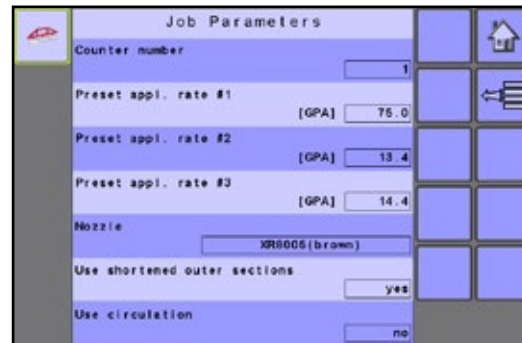
Idle Pressure

When the Liquid Pressure Sensor is installed and selected in the OEM Menu, Idle Pressure establishes the pressure that will be retained when the vehicle is idle.

Figure 6-10: Job Parameters - Idle Pressure

24 www.teejet.com
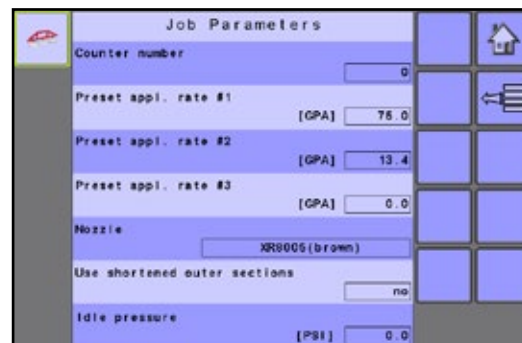
MACHINE

The Machine menu is used to configure vehicle parameters.

MENU STRUCTURE TABLE

Counters	Job Parameters	Machine	User Interface	Help	PC Communication

Machine
- ▶ Filling
- ▶ Operation
- ▼ Implement Parameters
  - ▶ Section Width
  - ▶ Nozzle Preset Setup
  - ▶ Regulation Parameters
  - ▶ Shortened Sections
- ▼ Calibrations
  - ▶ *Flow Sensor
  - ▶ *Liquid Pressure Sensor
  - ▶ Implement Speed Sensor
  - ▶ *Fill Flow Sensor
  - ▶ *Tank Level Sensor
  - ▶ *Wind Speed Sensor
  - ▶ Alarm Configuration
- ▼ OEM
  - ▶ Sensor Presence
  - ▶ Implement Parameters
  - ▶ Implement Geometry
  - ▶ Valve Setup
  - ▶ Tank Setup
  - ▶ TrackMatic
  - ▶ Regulation Details
  - ▶ Clear Total Counters
  - ▶ Factory Settings
  - ▶ PowerLink+
  - ▶ Use 3rd Party UT

The OEM setup menu is password protected and the settings in this menu are directly related to the fitted OEM equipment.

*Menu settings directly related to OEM equipment.

Machine Menu Structure Overview:

- ▶ Filling – establishes actual tank content and material density.
- ▶ Operation – establishes boost percentage step, speed source, simulated speed and simulated speed low and high levels.
- ▶ Implement Parameters – establishes boom section width, nozzle preset setup, regulation parameters, TrackMatic parameters and shortened sections.
- ▶ Calibrations – establishes the flow sensor, liquid pressure sensor, implement speed sensor, tank level sensor, fill flow sensor and wind speed sensor calibrations.
- ▶ Alarm Configurations – configures system alarms for tank content minimum, agitation tank level alarm, flow/pressure cross check and wind speed limit.
- ▶ OEM – menu is password protected and the settings in this menu are directly related to the fitted OEM equipment.

Figure 6-11: Machine

Filling

Tank filling establishes the amount of material remaining in the tank and the density of that material. Different options will be available depending on if a tank sensor is installed.

NOTE: *The size of the tank is established in the OEM menu. This is the number that will repopulate when the FULL TANK KEY* 🔲 *is pressed.*

Figure 6-12: Filling
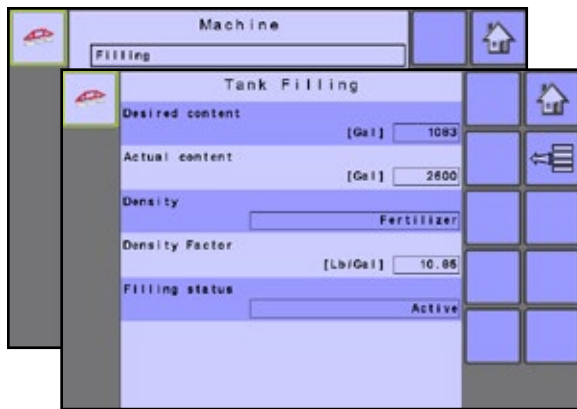
Desired Content

Desired Content establishes the desired maximum content volume. This option is available when tank sensor or fill flow sensor is active.

Actual Content

Actual Content displays the current volume of content in the tank. The volume can be manually adjusted.

NOTE: *When a tank sensor is active, the actual content can not be changed manually.*

Density

Density establishes the density of the material being applied. It can be set to either "Fertilizer" or "Water".

NOTE: *If "Fertilizer" is selected, a density factor option appears.*

Density Factor

Density Factor establishes the weight per volume setting based on the type of fertilizer being used. The fertilizer's ability to flow is affected by a number of factors. These factors may vary with each batch and it may change due to weather (humidity, etc.). In order to accommodate for this, the job computer uses a density factor to compensate for the nature of the applied fertilizer.

Full Tank

The FULL TANK KEY 🔲 returns the actual content volume value to the maximum volume of the tank.

NOTE: *The FULL TANK KEY* 🔲 *is not available when a tank sensor is activated.*

Desired Content

Desired Content establishes the desired maximum content volume. This option is available when tank sensor or fill flow sensor is active.

Filling Status

Filling Status establishes if the tank is actively being filled. It can be set to either "inactive" or "active". This option is available when tank sensor or fill flow sensor is active.

Operation

Operation establishes boost percentage step, speed source, simulated speed and simulated speed low and high levels.

Figure 6-13: Operation
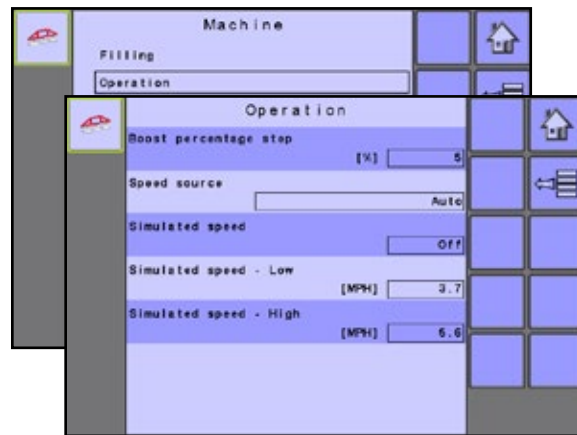
Boost Percentage Step

Application Rate Step is the percent of increase/decrease "boost" of the active application rate at which the product is being applied.

Speed Source

Speed Source selects whether to base the machine's speed on input from the CAN, an Implement or a Simulated source. Selecting "Implement" will allow for the configuration of pulses per 100 meters. Selecting "Simulated" will allow for simulated speed to be entered using the "Edit Value" option. Selecting "CAN" allows for speed being supplied by the ISOBUS CAN (usually from the TECU) to be used.

NOTE: *If "Implement" is selected, refer to the Calibrations section for further instructions.*

Simulated Speed

Simulated Speed establishes a low and high speed to be used when using the Simulated Speed source.

Figure 6-14: Step % Increase/Decrease in Operation Mode

Implement Parameters

Implement parameters establish the section width, nozzle preset setup, regulation parameters and shortened sections.

Implement Parameters Menu Structure Overview:

► Section Width – sets the spraying width during application

► Nozzle Preset Setup – where up to five (5) sets of nozzle options can be established to set the nozzle type, size, low/high pressure limit, reference flow and reference pressure.

► Regulation Parameters – where adjustments to the regulation valve action, nozzle spacing and regulations mode can be established.

► Shortened Sections – provides the operator the ability to turn off nozzles on the most left and most right section

Figure 6-15: Implement Parameters

Section Width

The Section Width menu is where the boom section widths are established. When the section widths change, power must be cycled in order to update the task controller on the UT.

NOTE: The number of boom sections available is set on the Implement Parameters screen in the OEM section.

Figure 6-16: Section Width

One-Touch Equal Widths

The ONE-TOUCH EQUAL WIDTHS KEY [icon] sets all boom section widths to the value set for the #1 Boom Section.

Nozzle Preset Setup

Nozzle Preset Setup establishes up to five (5) presets of nozzle options including the nozzle type, size, low/high pressure limit, reference flow and reference pressure.

NOTE: When "General" nozzle type is selected and an established nozzle size is selected, the Low Pressure Limit, High Pressure Limit, Reference Flow and Reference Pressure fields will be automatically set with the standard settings for the specific nozzle chosen. These setting can be manually adjusted.

Figure 6-17: Nozzle Preset Setup

Nozzle Preset

Each one of up to five (5) Nozzle Presets can be selected to establish different sets of nozzle options.

Nozzle Type

A drop down menu where the user can choose a type of nozzle for the chosen preset.

INTRODUCTION

OPERATION

TC/TRIP

FOLDING

TRANSPORT

SETUP

APPENDIX

Nozzle Size
A drop down menu where the user can choose the size of nozzle for the chosen preset.

Established Nozzle Capacities and Colors				
Size	**Color**	**Size**	**Color**
01	Orange	06	Gray
015	Green	08	White
02	Yellow	10	Light Blue
025	Purple	12	Telemagenta
03	Blue	15	Light Green
04	Red	20	Black
05	Brown	30	Beige

Figure 6-18: Nozzle Size on the Operating Screen
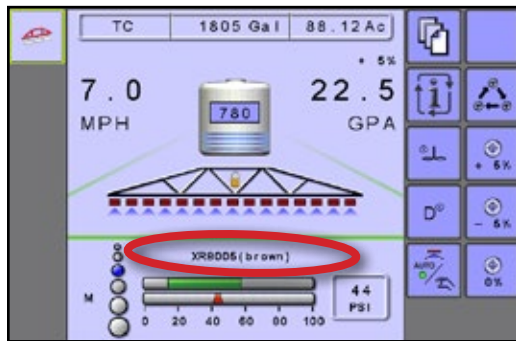
Low Pressure Limit
Establishes the limit for the lowest allowed operating pressure for the selected nozzle type.

High Pressure Limit
Establishes the limit for the highest allowed operating pressure for the selected nozzle type.

Reference Flow
Establishes the value for the volume applied over a specific time (GPM or LPM).

Reference Pressure
Establishes the pressure value at which the application rate is true (ISO=2 bar).

IMPORTANT! Always refer to the nozzle pressure values recommended by the supplier when setting the nozzle pressure.

Figure 6-19: Recommended Pressure Range bar and High Pressure Limit on the Operating Screen
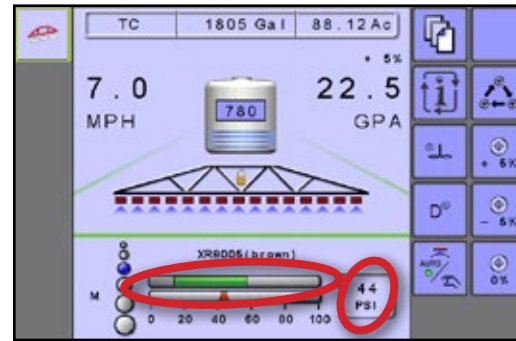
Factory Settings
Pressing the FACTORY RESET KEY 🔲 resets all nozzle settings to the default settings for the selected nozzle size and type.

Regulation Parameters
Regulation Parameters establishes adjustments to the regulation valve action, nozzle spacing and regulations mode.

Figure 6-20: Regulation Parameters - Flow Sensor Only
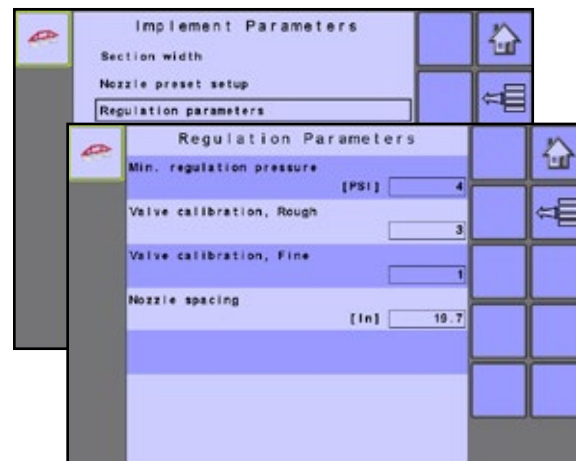
NOTE: Adjusting the Valve Calibration settings involves significant changes and adjustments should therefore be made in small steps.

NOTE: The following setting values can be adjusted to optimize system performance. If you notice that the valve seems to "search" for the programmed application rate by cycling the pressure up and down continuously, reduce the number until the "searching" is minimized or eliminated. Conversely, a higher number will increase the valve response time and "speed up" the rate of adjustment.

Minimum Regulation Pressure
When running in auto rate mode, the rate controller will not regulate to a pressure lower than the inserted value.

Valve Calibration, Rough

Rough regulation value calibration allows you to regulate the setting of the regulating valve to accommodate different application needs. Operating conditions may necessitate a higher or lower response setting for the regulating valve. This value adjusts the setting for coarse adjustments in relation to a large percentage outside of the target application rate

► If the system is too slow in finding the correct rate, the values should be increased.

► If the system is too unstable, the values should be decreased.

If your system is plumbed in a bypass mode, the valve setting number of nine (9) works very well in most applications.

If your system is plumbed in a throttling mode, start with a valve setting number of three (3) and adjust the number according to your application requirements. Low flow situations will require a slower response time. Adjusting agitation volumes to accommodate the regulating valve to work in a more fully open position allows for a faster response time, with little to no searching.

Valve Calibration, Fine

Fine regulation value calibration allows you to regulate the setting of the regulating valve to accommodate different application needs. Operating conditions may necessitate a higher or lower response setting for the regulating valve. This digit adjusts the setting for the fine tune adjustment in relation to a small percentage close to the target application rate.

► If the system is too slow in finding the correct rate, the values should be increased.

► If the system is too unstable, the values should be decreased.

If your system is plumbed in a bypass mode, the valve setting number of five (5) works very well in most applications.

If your system is plumbed in a throttling mode, start with a valve setting number of three (3) and adjust the number according to your application requirements. Low flow situations will require a slower response time. Adjusting agitation volumes to accommodate the regulating valve to work in a more fully open position allows for a faster response time, with little to no searching.

Nozzle Spacing

Nozzle Spacing establishes the distance between the nozzles on the boom. The nozzle spacing must accommodate the sections size.

Regulation Mode, Stop reg at low flow limit

Depending on Sensor Presence settings (Flow Sensor / Liquid Pressure Sensor), this section may vary.

► Flow Sensor is Enabled: Stop reg at low flow limit - If "Yes" is selected, regulating will stop if the sprayed volume is less than the minimum flow stated in the flow meter calibration screen.

Figure 6-21: Regulation Parameters - Flow Sensor is Enabled
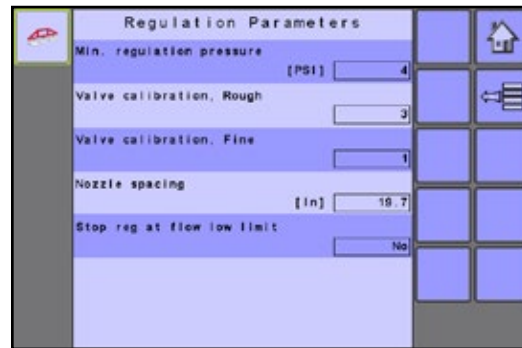
► Pressure Sensor is Enabled: Line will be empty, no setting available

Figure 6-22: Regulation Parameters - Pressure Sensor Enabled
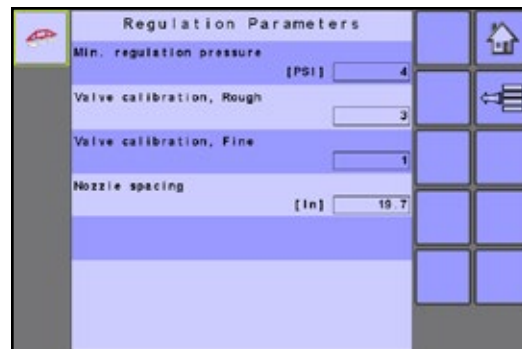
► Flow Sensor and Pressure Sensor are Enabled: Regulation mode presents two options - Flow based and Pressure based. If set to Flow based it will use flow meter within the stated range of the flow meter. If exceeding the range of the flow meter it will automatically jump to pressure based regulation. If set to Pressure based it will only use pressure based regulation.

Figure 6-23: Regulation Parameters - Flow Sensor and Pressure Sensor Enabled
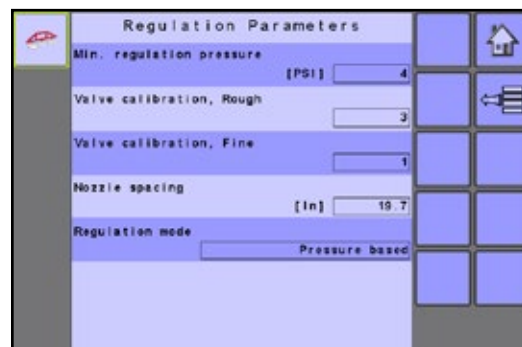
Shortened Sections

Shortened Sections provides the operator the ability to turn off nozzles on the most left and most right section.

NOTE: This setting applies to both sections. It is not possible to work with a single shortened section on left or right side.

Figure 6-24: Shortened Sections

Use Shortened Outer Sections

Choose "yes" or "no" to use shortened outer sections.

Left/Right Outmost Section Width

Determine the width of the left and right outmost sections, when shortened sections are set to "yes".

Calibrations

Calibrations establishes either manual or automatic settings of the sensors.

Calibrations Menu Structure Overview:

► Flow Sensor – establishes the pulses per gallon/liter of fluid used when spraying

► Fill Flow Sensor – establishes the pulses per gallon/liter of fluid entering the tank while filling

► Liquid Pressure Sensor – establish the correct pressure reading

► Implement Speed Sensor – establishes wheel pulses over a specified distance

► Tank Level Sensor – establishes tank levels as well as calibrates the tank shape

► Wind Speed Sensor – establish the correct wind speed reading

Figure 6-25: Calibrations
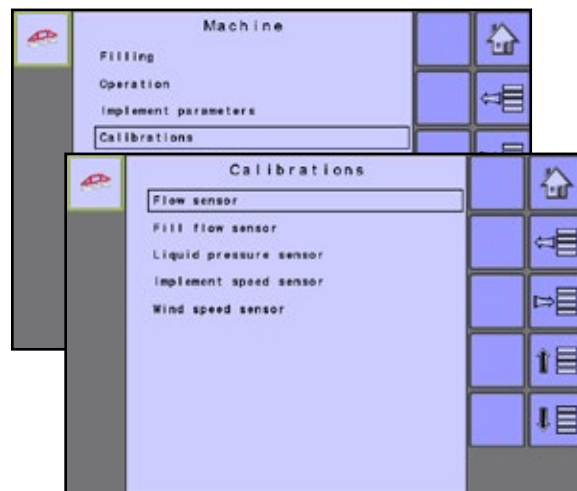
NOTE: For specific calibration options to appear, a specific sensor needs to be installed. Sensor availability is activated on the Sensor Presence screen in the OEM section.

Flow Sensor

The Flow Sensor establishes the pulses per gallon/liter, setting low and high limits. This value can be established manually or calibrated automatically.

Figure 6-26: Flow Sensor
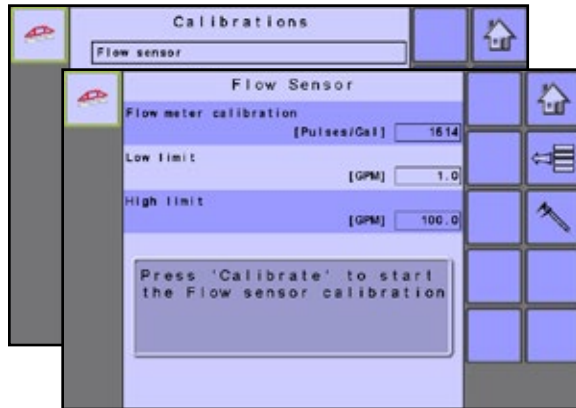
Manual Calibration

Manual calibration establishes the calibration and limits based on user entered values.

- To calibrate the sensor, enter the following:

  ► Flow Meter Calibration – sets the pulses per gallon/liter

  ► Low Limit – sets the low flow limit of the sensor

  ► High Limit – sets the high flow limit of the sensor

Automatic Calibration

If the number of pulses per gallon/liter for the flow meter is not known or to make sure the value is correct, automatic calibration establishes the calibration and limits.

- To calibrate the sensor, select CALIBRATION KEY [icon].

- Follow the series of instructions displayed.

- The following will be updated automatically:

  ► Flow Meter Calibration – sets the pulses per gallon/liter

  ► Low Limit – sets the low flow limit of the sensor

  ► High Limit – sets the high flow limit of the sensor

- Select the ACCEPT KEY [icon] to complete the calibration or the ESCAPE KEY [icon] to cancel.

An option to enter a Collected Volume is displayed if there is no calculated volume.

Fill Flow Sensor

The Fill Flow Sensor is used for measuring the volume of water and establishing pulses per gallon/liter going into the sprayer's tank while filling.

Figure 6-27: Fill Flow Sensor Manual Calibration
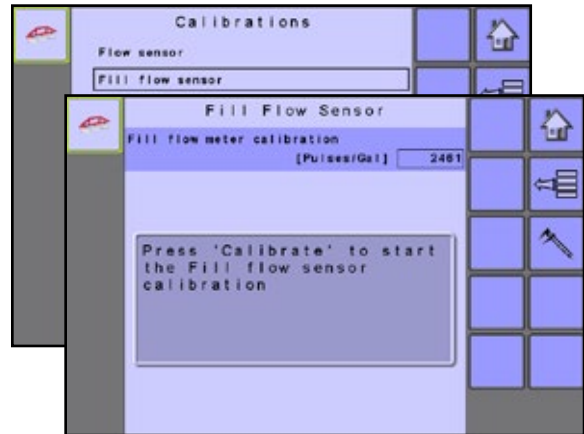
Manual Calibration

Manual calibration establishes the calibration and limits based on user entered values.

- To calibrate the sensor, enter the following:

  ► Fill Flow Meter Calibration – sets the pulses per gallon/liter

Automatic Calibration

If the number of pulses per gallon/liter for the fill flow meter is not known or to make sure the value is correct, automatic calibration establishes the calibration and limits.

- To calibrate the sensor, select CALIBRATION KEY [icon].

- Follow the series of instructions displayed.

- The following will be updated automatically:

  ► Fill Flow Meter Calibration – sets the pulses per gallon/liter

- Select the ACCEPT KEY [icon] to complete the calibration or the ESCAPE KEY [icon] to cancel.

The pulses counted will be displayed during the automatic calibration. An option to enter a collected volume is displayed if there is no calculated volume.

INTRODUCTION

OPERATION

TC/TRIP

FOLDING

TRANSPORT

SETUP

APPENDIX

Liquid Pressure Sensor

The liquid pressure sensor will show the actual pressure of the liquid at the boom. The sensor should be calibrated at both the "No Pressure" level and "Maximum Pressure" level.

Calibrate each option in the following order:

❶ Calibrate "No Pressure"

❷ Calibrate "Maximum Pressure"

Figure 6-28: Liquid Pressure Sensor
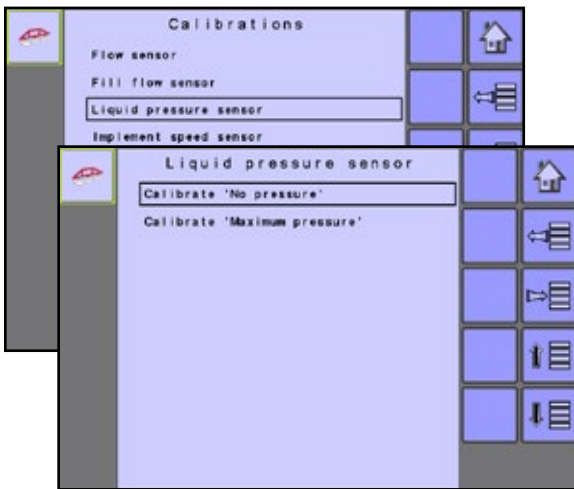
❶ Calibrate "No Pressure"

Calibrate "No Pressure" establishes the calibration while no pressure is being applied to the liquid pressure sensor.

Figure 6-29: Calibrate "No Pressure"

Manual Calibration

Manual calibration establishes the value based on a user entered value.

- To calibrate the sensor, enter the following:
    - ► Actual Calibration Value – sets the value at which there is no pressure on the sensor

Automatic Calibration

Automatic "No Pressure" calibration establishes the value using the automatic calibration function.

- To calibrate the sensor, select CALIBRATION KEY.
- The following will be updated automatically:
    - ► Actual Calibration Value – automatically updates to the value at which there is no pressure on the sensor

❷ Calibrate "Maximum Pressure"

Calibrate "Maximum Pressure" calculates the maximum pressure level of the attached pressure sensor. This calculation is based on the recommended maximum pressure level and a tested reference pressure level.

NOTE: Manual Calibration is not available.

Figure 6-30: Calibrate "Max Pressure"

Automatic Calibration

Automatic "Maximum Pressure" calibration establishes the value at which the pressure level on the actual pressure sensor and the reference liquid pressure are equal.

- Establish Maximum Liquid Pressure – determined by the type of pressure sensor used and should be set to the recommendations included with the pressure sensor.
- Establish Reference Liquid Pressure – the pressure level you will want to reach on the actual pressure sensor when running the calibration process. The reference pressure cannot be changed while calibration is in progress.
- To calibrate the sensor, select CALIBRATION KEY.
- Start the application, press the START/STOP KEY.
- Adjust the regulation valve using the REGULATION VALVE OPEN/CLOSE KEYS so that the pressure level on the actual pressure sensor and the reference liquid pressure are equal.
- The following will be updated automatically:
    - ► Actual Calibration Value – automatically updates to the value of the maximum pressure on the sensor

- Select the ACCEPT KEY ☑ to complete the calibration or the ESCAPE KEY ⬑ to cancel.

Review the Help Screen ? for more information.

Figure 6-31: Liquid Pressure Sensor Calibration
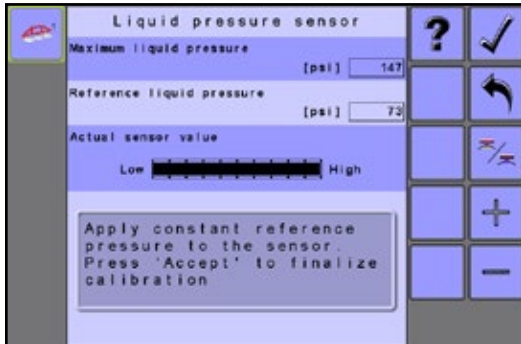
Implement Speed Sensor

The Implement Speed Sensor establishes the wheel pulses over a specified distance. This value can be established manually or calibrated automatically.

Figure 6-32: Implement Speed Sensor
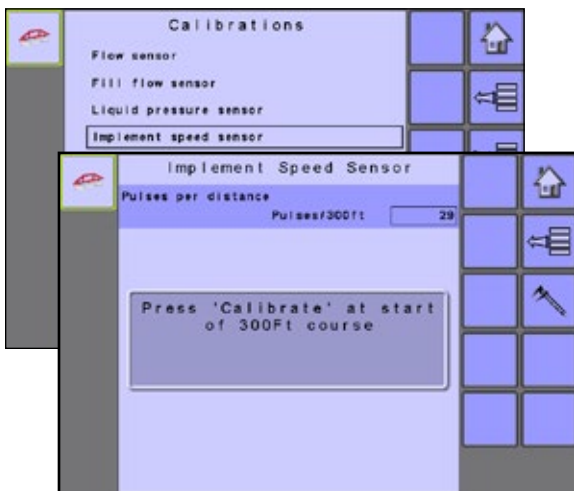
Manual Calibration

Manual calibration establishes the pulses based on a user entered value.

- To calibrate the sensor, enter the following:

  ► Pulses per Distance – sets the pulses per 300 ft/100 m.

Automatic Calibration

Automatic calibration establishes the pulses using the automatic calibration function.

- To calibrate the sensor, select CALIBRATION KEY 🖊.

- Follow the series of instructions displayed.

- The following will be updated automatically:

  ► Pulses per Distance – sets the pulses per 300 ft/100 m.

- Select the ACCEPT KEY ☑ to complete the calibration or the ESCAPE KEY ⬑ to cancel.

The counted wheel pulses will be displayed during the automatic calibration.

Tank Level Sensor

Tank Level Sensor establishes the empty, minimum and maximum levels for the tank as well as calibrates the tank shape.

Calibrate each option in the following order:

❶ Calibrate "Empty"

❷ Calibrate "Minimum Level"

❸ Calibrate "Maximum Level"

❹ Calibrate "Tank Shape"

Figure 6-33: Tank Level Sensor
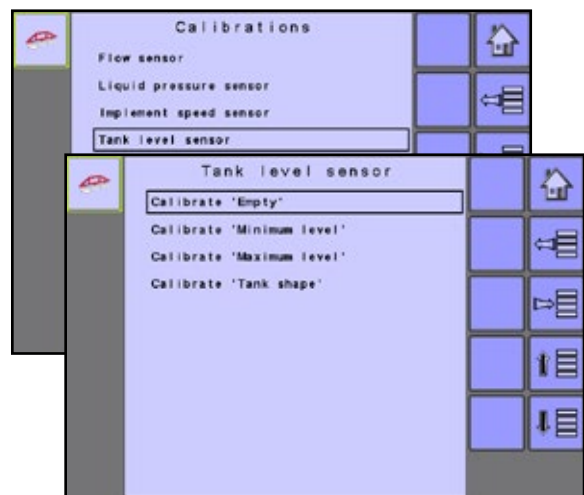
❶ **Calibrate "Empty"**

Calibrate "Empty" establishes the empty tank value.

IMPORTANT: The tank should be completely empty.

Figure 6-34: Empty Tank

ISOBUS Job Computer: IC34 Sprayer

OPERATION
TC/TRIP
FOLDING
TRANSPORT
SETUP
APPENDIX

Figure 6-35: Calibrate Empty

Figure 6-37: Calibrate Minimum Level

Automatic Calibration

If the calibration value for the empty level is not known or to make sure the value is correct, automatic calibration establishes the calibration and limits.

• To calibrate the sensor, select CALIBRATION KEY.

• The following will be updated automatically:

► Actual Sensor Value – sets the pressure on the sensor at which the tank is considered empty.

Manual Calibration

Manual calibration establishes the calibration based on a user entered value.

NOTE: Manual establishment of an Actual Calibration Value will override the automatically calibrated Actual Sensor Value.

• To calibrate the sensor, enter the following:

► Actual Calibration Value – sets the pressure on the sensor at which the tank is considered empty.

❷ **Calibrate "Minimum Level"**

Calibrate "Minimum Level" establishes the minimum level of water on the tank sensor.

► Tank Minimum Level – the level to which the tank should be filled and will be referenced to calibrate the sensor. Be sure the tank is filled with the contents displayed on the screen. The amount shown is established in Machine-> OEM-> Tank Setup-> Minimum Content.

Figure 6-36: Minimum Tank Level

Water covers sensor completely
(typically 1-4 gallons/5-15 liters)
Pump

Automatic Calibration

If the calibration value for the minimum level is not known or to make sure the value is correct, automatic calibration establishes the calibration and limits.

• To calibrate the sensor, select CALIBRATION KEY.

• The following will be updated automatically:

► Actual Sensor Value – sets the pressure on the sensor at which the tank is considered at the referenced Tank Minimum Level.

Manual Calibration

Manual calibration establishes the calibration based on a user entered value.

NOTE: Manual establishment of an Actual Calibration Value will override the automatically calibrated Actual Sensor Value.

• To calibrate the sensor, enter the following:

► Actual Calibration Value – sets the pressure on the sensor at which the tank is considered at the referenced Tank Minimum Level.

❸ **Calibrate "Maximum Level"**

Calibrate "Maximum Level" establishes the maximum level of water on the tank sensor.

► Tank Maximum Level – the level to which the tank should be filled and will be referenced to calibrate the sensor. Be sure the tank is filled with the contents displayed on the screen. The amount shown is established in Machine-> OEM-> Tank Setup-> Maximum Content.

Figure 6-38: Maximum Tank Level

Tank filled to maximum level
Pump

34   www.teejet.com
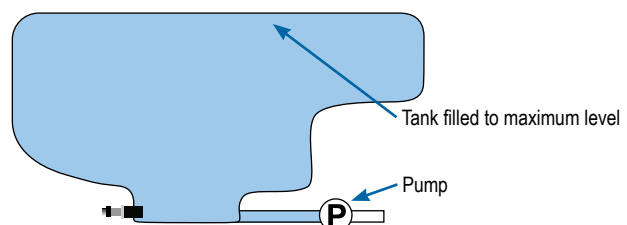
Figure 6-39: Calibrate Maximum Level

Automatic Calibration

If the calibration value for the maximum level is not known or to make sure the value is correct, automatic calibration establishes the calibration and limits.

• To calibrate the sensor, select CALIBRATION KEY 🔧.

• The following will be updated automatically:

► Actual Sensor Value – sets the pressure on the sensor at which the tank is considered at the referenced Tank Maximum Level.

Manual Calibration

Manual calibration establishes the calibration based on a user entered value.

NOTE: Manual establishment of an Actual Calibration Value will override the automatically calibrated Actual Sensor Value.

• To calibrate the sensor, enter the following:

► Actual Calibration Value – sets the pressure on the sensor at which the tank is considered at the referenced Tank Maximum Level.

❹ **Calibrate "Tank Shape"**

Calibrate "Tank Shape" establishes the tank shape.

NOTE: Manual Calibration is not available for Tank Shape calibration.

► Tank Maximum Level – the level to which the tank should be filled and will be referenced to calibrate the sensor. Be sure the tank is filled with the contents displayed on the screen. The amount shown is established in Machine-> OEM-> Tank Setup-> Maximum Content.

Figure 6-40: Tank Shape Calibration

Pump water at same rate to empty tank in 30-60 minutes
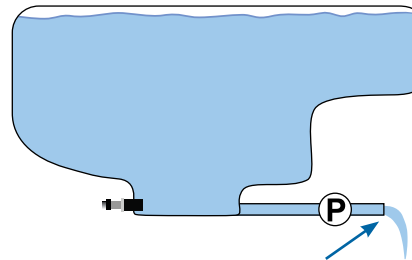
Figure 6-41: Calibrate 'Tank Shape'

Automatic Calibration

• To calibrate the sensor, select CALIBRATION KEY 🔧.

• Follow the series of instructions displayed.

• The following will be updated automatically:

► Actual Tank Sensor Value – records the pressure on the sensor as the tank is emptied at a steady rate.

• Select the ACCEPT KEY ✔ to complete the calibration

Accumulated Volume Output

Sprayed volume counted by the flow meter during tank shape calibration. The value can be used as "Tank maximum level" value.

NOTE: Value will not be transferred automatically to the tank settings. Value is just to serve as a cross check.

NOTE: The flow meter must be carefully calibrated before doing tank shape calibration.

Import/Export "Tank Shape"

Use the IMPORT KEY 📥, or EXPORT KEY 📤 to manage saved tank shape information.

Wind Speed Sensor

Wind Speed Sensor establish the correct wind speed reading. This value can only be established manually.
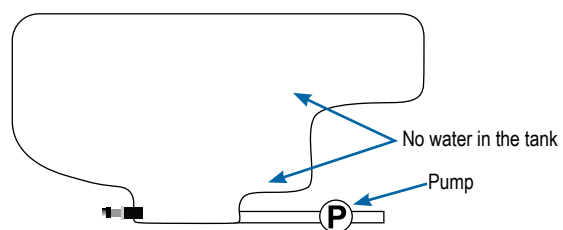
Figure 6-42: Wind Speed Sensor
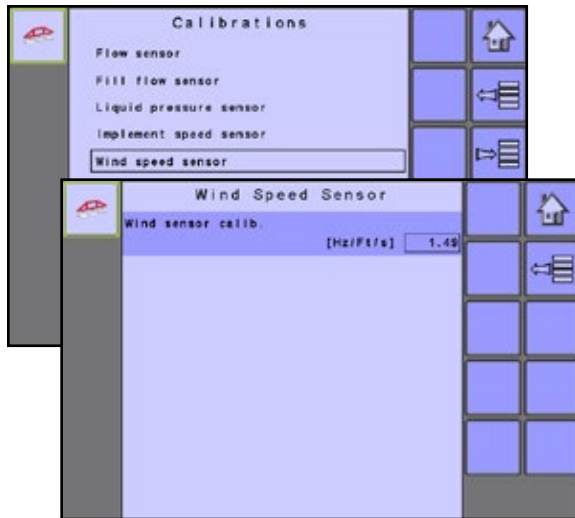
Manual Calibration

Manual calibration establishes the pulses based on a user entered value.

- To calibrate the sensor, enter the following:
  - ► Wind Sensor Calibration – sets the Hertz per feet/meter per second.

Alarm Configurations

Alarm Configurations establishes alarms on or off as well as sets their trigger level.

Figure 6-43: Alarm Configurations
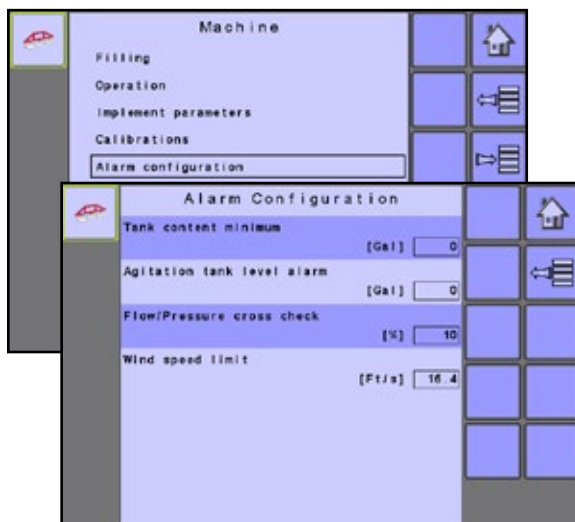
Tank Content Minimum

Tank Content Minimum establishes the minimum volume level at which an alarm will sound. Without a Tank Sensor, the minimum is determined by calculating the difference between the established actual tank content volume and the calculated applied content volume. With a Tank Sensor, the minimum is directly related to the sensor reading.

Agitation Tank Level Alarm

Agitation Tank Level Alarm establishes the minimum volume level at which an alarm will sound when agitation is active.

Flow/Pressure Cross Check

Flow/Pressure Cross Check establishes at what percentage the associated alarm will sound.

To deactivate this alarm, set the flow/pressure cross check percentage to zero (0).

Wind Speed Limit

Setting the Wind Speed Limit alarm will establish a threshold of operation in high wind situations.

OEM

The OEM setup menu is password protected and the settings in this menu are directly related to the fitted OEM equipment. Contact the manufacturer or local dealer for service.

NOTE: Some setup options are available or unavailable depending on the OEM settings. See the "Settings Menu Options Table" for more information.

OEM Menu Structure Overview:

- ► Sensor Presence – used to establish sensors for Flow, Liquid Pressure, Fill Flow and the Tank
- ► Implement Parameters – used to establish the Sprayer Mode, Number of Sections and Circulation
- ► Implement Geometry – used to establish if the implement is hitch mounted or trailed to predict the angle between the tractor and the boom when turning or driving in curves in the field.
- ► Valve Setup – used to establish the Regulation Valve Type, Section Valve Behavior and Section Valve Type
- ► Tank Setup – used to establish maximum and minimum tank content, Auto Filling mode and Auto Filling Offset value
- ► TrackMatic – used to configure and calibrate specific features when a TrackMatic system is installed
- ► Regulation Details – used to adjust the control of the regulation valve
- ► Clear Total Counters – used to reset all total counters including area, volume and time to the default settings
- ► Factory Settings – ability to import implement and suer settings from a configuration file, or export to generate a configuration file based on the current implement and user settings.

► PowerLink+ – provides information on TankMatic and output modules, as well as the ability to turn them on or off and manage allocations

► Use 3rd Party UT – ability to connect to the use of a 3rd party UT's This feature is locked by the OEM. If locked, the ECU will only work with TeeJet ISOBUS UT's. If unlocked, the ECU will work with any ISOBUS UT.

Figure 6-44: Machine to OEM
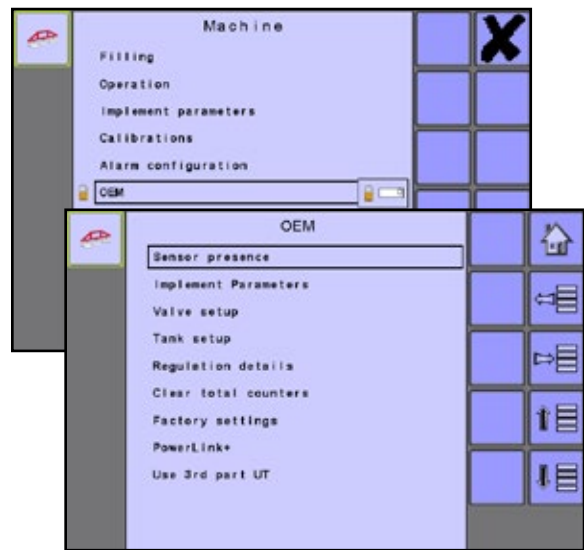
USER INTERFACE

User Interface allows the operator to select the system nozzle settings and universal terminal (UT).

MENU STRUCTURE TABLE

Counters	Job Parameters	Machine	User Interface	Help	PC Communication

Figure 6-45: User Interface
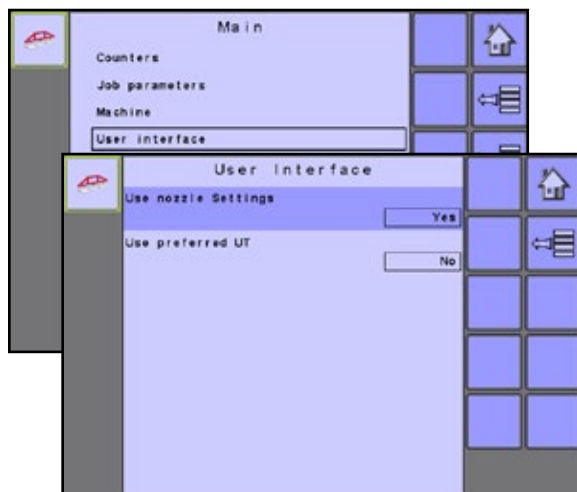
Use Nozzle Settings

Use Nozzle Settings sets the Nozzle Settings preference to either "Yes" or "No."

• If set to "Yes" the nozzle ISO nozzles presets will be available as well as the droplet size monitor.

• If set to "No" the Operation Screen will show Target rate and Actual rate instead of droplet size, pressure range and actual pressure.

Use Preferred UT

Use Preferred UT sets the universal terminal (UT) preference.

If more than one UT is available on the ISOBUS CAN,

• Select "Yes" to use the current UT.

• Select "No" to use a different UT on the ISOBUS CAN. If all UTs are set to "No", the system will arbitrarily select which UT to use.

If only one UT is available,

• Select "No"

NOTE: This should always be set to "No" unless another UT is on the CAN bus.

HELP

The Help menu allows the operator to perform diagnostic tests and view system information.

MENU STRUCTURE TABLE					
Counters	Job Parameters	Machine	User Interface	Help	PC Communication
				▼ Diagnostic	
				► Test Input	
				► Test Output	
				► PowerLink+	
				► UT	
				► TECU	
				► About	

Diagnostic

Diagnostic is used to troubleshoot input/output of the controller

Diagnostic Menu Structure Overview:

- ► Test Input – displays the input high and low values on the installed sensors
- ► Test Output – sets Liquid Valve values
- ► PowerLink+ – provides status on the connected output modules
- ► UT Data – provides data information on the controller
- ► TECU – tractor control unit

Figure 6-46: Diagnostic
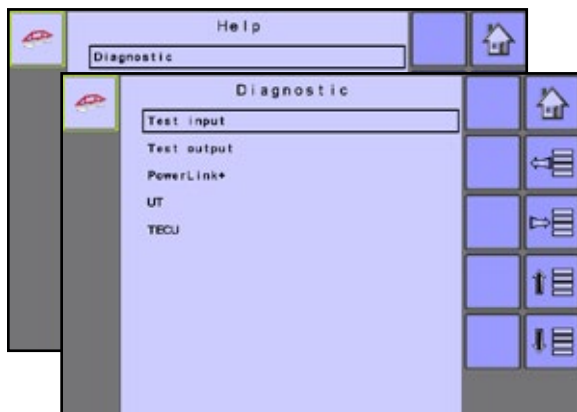
Test Input

Test Input displays the input high and low values on the installed sensors.

- To clear test input data, press the TRASH CAN KEY 🗑.

Figure 6-47: Test Input
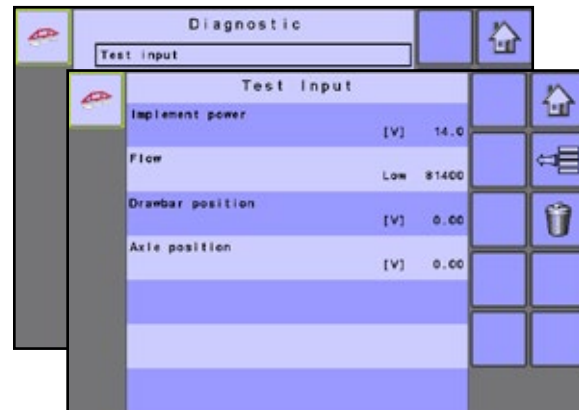
Test Output

Test Output sets the Liquid Valve PWM Dutycycle percentage as well as if Liquid Master Valve and Liquid Valve Direction are on or off.

Liquid Master Valve
Master Valve is used to test if the Master Valve is operating correctly. If you change the setting to "on", the valve will open, change it to "off" and the valve will close.

Liquid Valve PWM Dutycycle
Liquid Valve PWM Dutycycle is used to test the regulating valve at different percentages *of dutycycle.*

Liquid Valve Direction
Liquid Valve Direction is used to verify if the operation of the Liquid valve direction is correct to a specific duty cycle.

Figure 6-48: Test Output
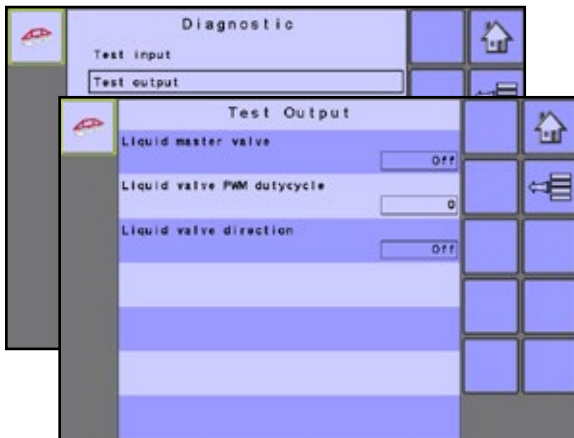
PowerLink+

Test the connected output modules and show a status for the individual modules

Figure 6-49: PowerLink+

UT

The Universal Terminal (UT) menu provides UT Data information regarding the universal terminal controller (i.e., address version, etc.).

- GO TO NEXT UT KEY [ ] toggle between terminals/controllers.

- DELETE OBJECT POOL KEY [ ] to delete saved information on the UT. This forces the UT to upload all information from the IC34 on the next power cycle.

Figure 6-50: UT Data
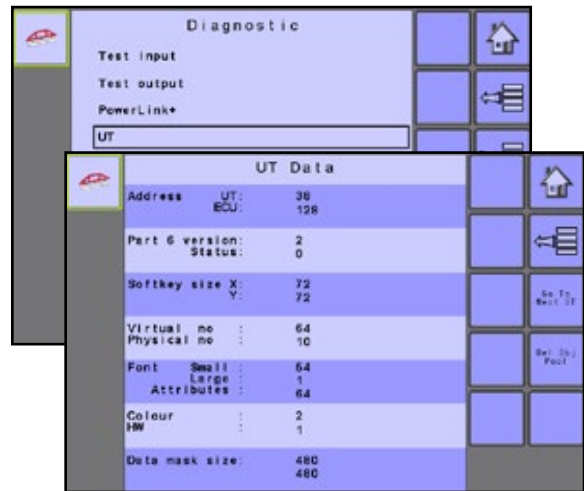
NOTE: Reconnect the IC34 Job Computer to implement and display changes.

TECU

The TECU is a control unit, residing on the tractor, that performs basic functions such as power handling, speed info, etc. TECU Data is an informational screen showing the vehicle information.

Figure 6-51: TECU Data

INTRODUCTION

OPERATION

TC/TRIP

FOLDING

TRANSPORT

SETUP

APPENDIX
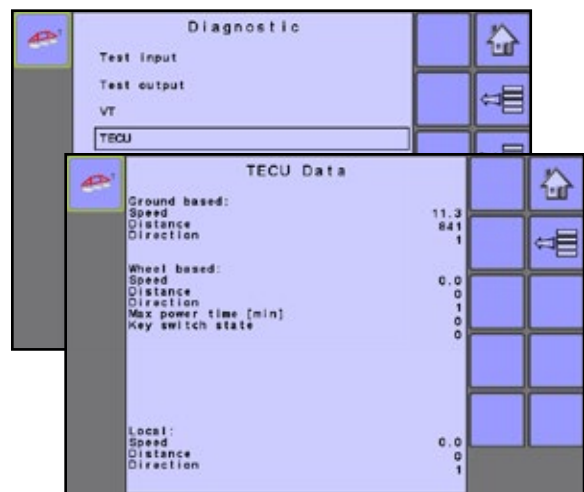
About

The About screen provides information on the IC34 such as software version, build number, etc. This information may become useful in case of technical support.

Figure 6-52: About

PC COMMUNICATION

Communication establishes the IC34's ability to communicate with an external computer.

MENU STRUCTURE TABLE					
Counters	Job Parameters	Machine	User Interface	Help	PC Communication

Figure 6-53: PC Communication
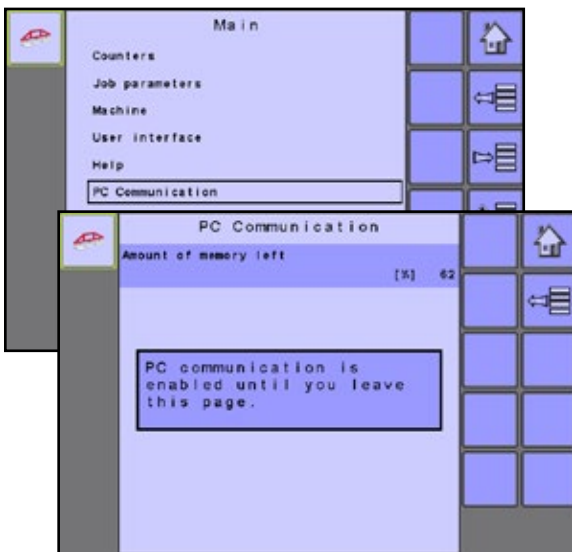
Amount of Memory Left

Displays the consoles memory availability for storage and file transfer.

APPENDIX A - FACTORY SETTINGS & RANGES

JOB PARAMETERS

Description	Factory Setting	Range	User Setting
Active Trip Counter	1	1 - 15	1
			2
			3
			4
			5
			6
			7
			8
			9
			10
			11
			12
			13
			14
			15
Preset Application Rate #1	0.0 GPA (US)	0.0 - 700.6 (US)	#1
Preset Application Rate #2	0.0 l/ha	0.0 - 6553	#2
Preset Application Rate #3	0.0 GPA (UK)	0.0 - 583.4 (UK)	#3
Nozzle	Established under Machine--> Implement Parameters--> Nozzle Preset Setup		
Use Shortened Outer Sections	No	Yes	
		No	
Circulation	No	Yes	
		No	
Idle Pressure	0.0	0.0 - 9.9	

MACHINE

Tank Filling

Description	Factory Setting	Range/Options	User Setting
Desired Content	0 gal	0 - 2641	
	0 l	0 - 9997	
Actual Content	0 lbN (US)	0 - 12000	
	0 kgN	0 - 5443	
	0 lbN (UK)	0 - 12000	
Density	Water	Water	
		Fertilizer	

INTRODUCTION

OPERATION

TC/TRIP

FOLDING

TRANSPORT

SETUP

APPENDIX

Description	Factory Setting	Range/Options	User Setting
Density Factor	6.68 lb/gal (US) 0.80 kg/l 8.02 lb/gal (UK)	6.68 - 16.69 (US) 0.80 - 2.00 8.02 - 20.04 (UK)	
Filling Status	Inactive	Active Inactive	

Operation

Description	Factory Setting	Range/Options	User Setting
Boost Percentage Step	5%	1 - 20	
Speed Source	Auto	Auto Ground Based Wheel Based Vehicle Based Implement	
Simulated Speed	Off	On Off	
Simulated Speed - Low	0.0 mph / km/h	0.0 - 62.1	
Simulated Speed - High	0.0 mph / km/h	0.0 - 62.1	

Implement Parameters

Section Width

Description	Factory Setting	Range	User Setting
Section Width	118 in / 300 cm	0 - 9999	

Nozzle Preset Setup

Description	Factory Setting	Range/Options	User Setting
Nozzle Preset	1	1 - 5	1 2 3 4 5
Nozzle Type	General	General User Nozzle	

Description	Factory Setting	Range/Options	User Setting
Nozzle Size	025 (purple)	01 Orange	
		015 Green	
		02 Yellow	
		025 Purple	
		03 Blue	
		04 Red	
		05 Brown	
		06 Grey	
		08 White	
		10 Light Blue	
		12 Telemagenta	
		15 Light Green	
		20 Black	
Low Pressure Limit	14 psi / 1.0 bar	0 - 369 / 0.0 - 25.5	
High Pressure Limit	58 psi / 4.00 bar	0 - 369 / 0.0 - 25.5	
Reference Flow	0.25 GPM (US) / 0.81 l/min / 0.18 GPM (UK)	0.00 - 26.42 (US) / 0.00 - 999.99 / 0.00 - 22.00 (UK)	
Reference Pressure	40 psi (US) / 2.00 bar / 29 psi (UK)	1 - 1450 (US) / 0.10 - 99.99 / 1 - 1450 (UK)	

Regulation Parameters

Description	Factory Setting	Range	User Setting
Minimum Regulation Pressure	10 psi / 0.7 bar	0-29	
Valve Calibration, Rough	19	1 - 19	
Valve Calibration, Fine	9	1 - 9	
Nozzle Spacing	19.7 in / 50 cm	1.0 - 787.4 / 1.0 - 1,999.9	
Regulation Mode	Flow	Pressure / Flow	
Stop Regulation at Flow Low Limit	No	Yes / No	

Shortened Sections

Description	Factory Setting	Range/Options	User Setting
Use Shortened Outer Sections	No	Yes / No	
Left/Right Outmost Section Width	39 in / 100 cm	20 - 9,999 / 50 - 9,999	

Calibrations

Flow Sensor

Description	Factory Setting	Range/Options	User Setting
Flow Meter Calibration	2460.52 pulses/gal	10 - 18,927	
	650 pulses/l	10 - 50,000	
Low Limit	2.6 GPM	0.0 - 26.3	
	10 l/min	0.0 - 99.9	
High Limit	52.8 GPM	0.0 - 264.1	
	200 l/min	0.0 - 999.9	

Liquid Pressure Sensor

Description	Factory Setting	Range/Options	User Setting
Calibrate 'No Pressure'	0	0 - 305	
Calibrate 'Maximum Pressure'	363 psi	1 - 725	
	25 bar	0 - 50	

Implement Speed Sensor

Description	Factory Setting	Range/Options	User Setting
Pulses per Distance	229 pulses/300 ft	0 - 59,436	
	250 pulses/100 m	0 - 65,000	

Tank Level Sensor

Description	Factory Setting	Range/Options	User Setting
Calibrate 'Empty'	0	0 - 500	
Calibrate 'Minimum Level'	77	1 - 700	
Calibrate 'Maximum Level'	671	1 - 1,024	
Calibrate 'Tank Shape'	N/A	N/A	

Wind Speed Sensor

Description	Factory Setting	Range/Options	User Setting
Wind Sensor Calibration	Hz/ft/sec	0.00 - 0.01	
	Hz/m/sec	0.01 - 99.98	

Alarm Configurations

Description	Factory Setting	Range/Options	User Setting
Tank Content Minimum	0 gal (US)	0 - 2,641	
	0 l	1 - 9,999	
Agitation Tank Level Alarm	0 gal (US)	0 - 2,641	
	0 l	0 - 9,999	
Flow/Pressure Cross Check	0 %	0 - 50	
Wind Speed Limit	16.4 ft/sec	0 - 81.9	
	5 m/sec	0 - 25	

INTRODUCTION
OPERATION
TC/TRIP
FOLDING
TRANSPORT
SETUP
APPENDIX

USER INTERFACE

Description	Factory Setting	Range/Options	User Setting
Use Nozzle Settings	Yes	Yes No	
Use Preferred UT	No	Yes No	

APPENDIX B - UNIT SPECIFICATIONS

Dimensions		7.5 x 7.25 x 2.375 in
		19.05 x 18.42 x 6.03 cm
Weight		1.42 lbs / 0.644 kg
Connector		30 position Cinch pins. A1-K3
		18 position Cinch pins. A1-F3
Environmental	Operating	-40 to +85°C
	Humidity	90% non-condensing
Input/Output		ISO 11783 (ISOBUS)
Power Requirement		<9 watts @12 VDC

IC34 SPRAYER JOB COMPUTER
U S E R   M A N U A L

Software Version 1.16 - 1.19

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