IC45 SPRAYER w/ ECOSTOP

REFERENCE GUIDE

98-01620 R1

ISOBUS TeeJet

TeeJet® TECHNOLOGIES

A Subsidiary of Spraying Systems Co.®

To ensure optimal use of the equipment, please read this manual thoroughly. Please contact TeeJet Technologies Customer Support or an authorized TeeJet Technologies dealer if additional support is required.

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IMPORTANT SAFETY INFORMATION

All safety related and operating instructions should be read before the system is operated. Safe operation of machinery is the operators responsibility. Safety procedures must be posted close to the equipment and clearly visible to and legible by the operator. Safety procedures should meet all company and local regulations, as well as MSDS-requirements. For assistance, contact a local dealer.

Safety Alert Symbol Definitions:

DANGER! This symbol is reserved for the most extreme situations where serious personal injury or death is imminent.

WARNING! This symbol indicates a hazardous situation that could result in serious personal injury or death.

CAUTION! This symbol indicates a hazardous situation that could result in minor or moderate personal injury.

NOTE: This symbol addresses practices in which the operator should be aware.

GENERAL WARNINGS AND PRECAUTIONS

DANGER!

- Read and follow instructions. If instructions are unclear after reading the manual, please contact a local dealer.
- Keep children away from equipment.
- Do not operate machinery under the influence of alcohol or any illegal substance.
- Some systems include a fan heater. Never cover the heater otherwise there will be a serious danger of fire!

WARNING! ELECTRICAL / SHOCK HAZARDS

- Before working on any particular component, make sure that all power supplies have been switched off and cannot be accidentally switched on.
- Disconnect power leads before using an arc welder on equipment or anything connected to the equipment.
- Systems including frequency drives have a risk of electric shock due to residual voltage. It is not permissible to open the equipment neither to disconnect the system or any quick connection until 5 minutes after the power has been removed.
- Only operate the system from the power source indicated in the manual. If you are not sure of the power source, consult qualified service personnel.
- Do not use a high pressure cleaner to clean electrical components. This could damage electrical components and subject the operator to risk of electrical shock.
- The electrical supply to the equipment must be properly routed and connected to the equipment. All connections must meet the specified requirements.

WARNING! PRESSURIZED HYDRAULIC SYSTEMS

- Always wear personal protective equipment (PPE) when performing work on hydraulic systems.
- Adhere to the machine manufacture's approved maintenance instructions when working on the hydraulic system.
- Always turn equipment off when working on the hydraulic system. Take appropriate precautions when opening systems that have been previously pressurized.
- Be aware that hydraulic oil may be extremely hot and under high pressure.

WARNING! CHEMICAL HANDLING

- Always wear PPE when handling any chemical substance.
- Always follow safety labels and instructions provided by the chemical manufacturer or supplier.
- The operator should have full information on the nature and the quantity of the material to be distributed.
- **ADHERE TO FEDERAL, STATE AND LOCAL REGULATIONS REGARDING THE HANDLING, USE OR DISPOSAL OF AGRICULTURAL CHEMICALS.**

WARNING! PRESSURIZED SPRAY SYSTEM

- It is important to recognize proper safety precautions when using a pressurized spray system. Fluids under pressure can penetrate skin and cause serious personal injury.
- The system pressure should never exceed the lowest rated component. Always know your system and all component capabilities, maximum pressures and flow rates.
- Filters can only be opened when the manual valves in front of and behind the filter are in closed position. If any appliance has to be taken out of the piping, manual valves in front of and behind this appliance have to be in closed position. If they are reinstalled, make sure that this happens correctly, that this apparatus is well aligned, and that all connections are tight.
- The plumbing supply to the equipment should meet all company and local regulations and must be properly routed and connected to the equipment. All connections must meet the specified requirements.
- It is advised to drain and purge the liquid train when the equipment shall not be used for a longer period of time.

WARNING! AUTO STEERING SAFETY

- To prevent serious personal injury or death from being run over by the vehicle or automated motion of the steering system, never leave the vehicles operator seat with the system engaged.
- To prevent serious personal injury or death from being run over by the vehicle or automated motion of the steering system, verify the area around the vehicle is clear of people or obstacles before startup, calibration, tuning or engaging the system.
- Make sure equipment is tightly secured to the proper components.
- Never drive on public roads with system engaged.

CAUTION! EQUIPMENT SAFETY, MAINTENANCE, AND SERVICE

- The equipment should be operated only by properly trained, qualified personnel. They must have proven their skills in the operation of the equipment.
- Before using the equipment, the operator has to check if the equipment is in good condition and can be used safely. If not, the equipment cannot be used.
- All necessary PPE must be readily available to the operator at all times.
- Routinely check the system and components for wear and damage. Replace or repair when necessary.
- Only qualified authorized experts are allowed to repair or maintain the installation. The maintenance and operating instructions shall be rigidly observed and followed.
- A complete manual for the equipment must be available to the operator or maintenance technician at all times.

CAUTION! HARNESS CABLE AND HOSE SAFETY

- Routinely check all harness cables and hoses for damage or wear. Replace or repair when necessary.
- Do not route harness cables and hoses with sharp bends.
- Do not strap harness cables and hoses to lines with high vibration or spikes in pressure.
- Do not strap harness cables and hoses to lines transporting hot fluids.
- Protect harness cables and hoses from sharp objects, equipment debris, and material buildup.
- Allow sufficient length for harness cables and hoses to have free movement on sections that move during operation, and be sure that harness cables or hoses do not hang below the equipment.
- Allow sufficient clearance for harness cables and hoses from implement and machine operational zones.
- When cleaning equipment, protect harness cables from high pressure wash.

NOTE: TOUCH SCREEN CARE

- Keep sharp objects away from the touch screen device. Touching the screen with a sharp object could result in damage to the display.
- Do not use harsh chemicals to clean the console/display. The correct way to clean a console/display is to use a soft damp cloth or anti-static wipe, similar to cleaning a monitor on a computer.

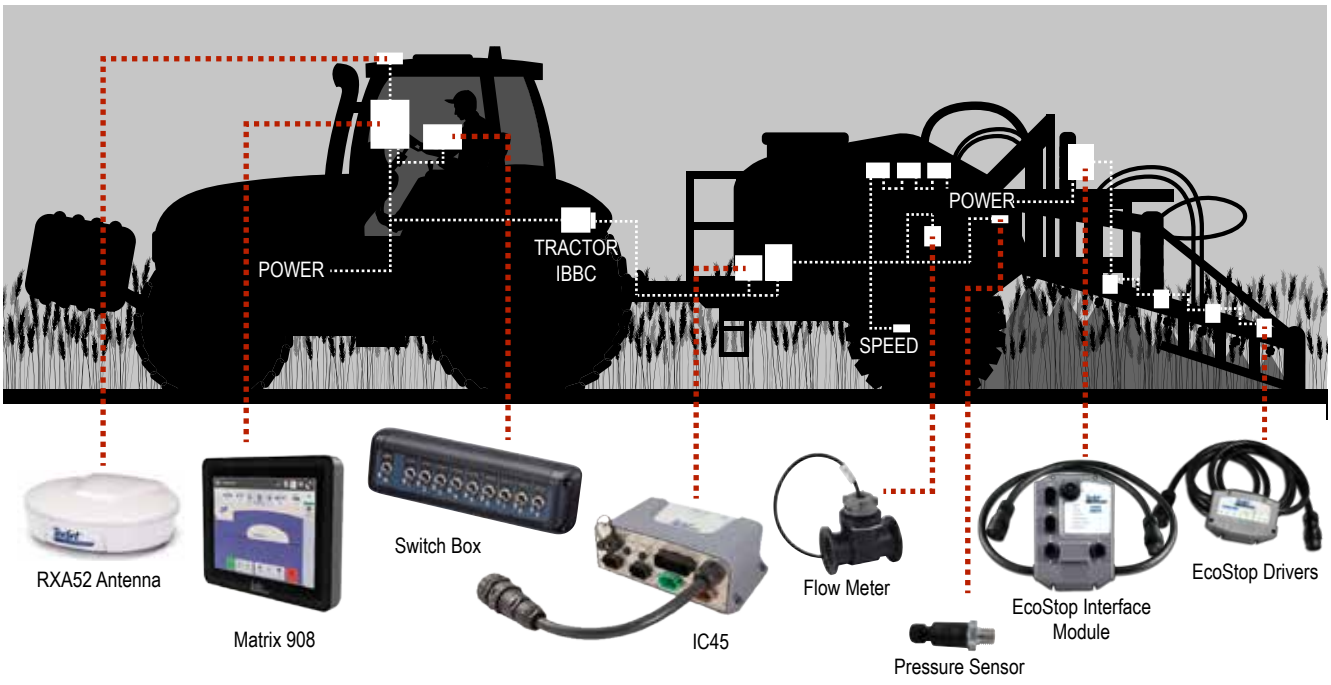
NOTE: RECOMMENDED REPLACEMENT PARTS

- The system has been designed with components that work together to provide the best system performance. When the system requires replacement parts, only TeeJet recommended components should be used to maintain proper system operation and safety.

END USER LICENSE AGREEMENT

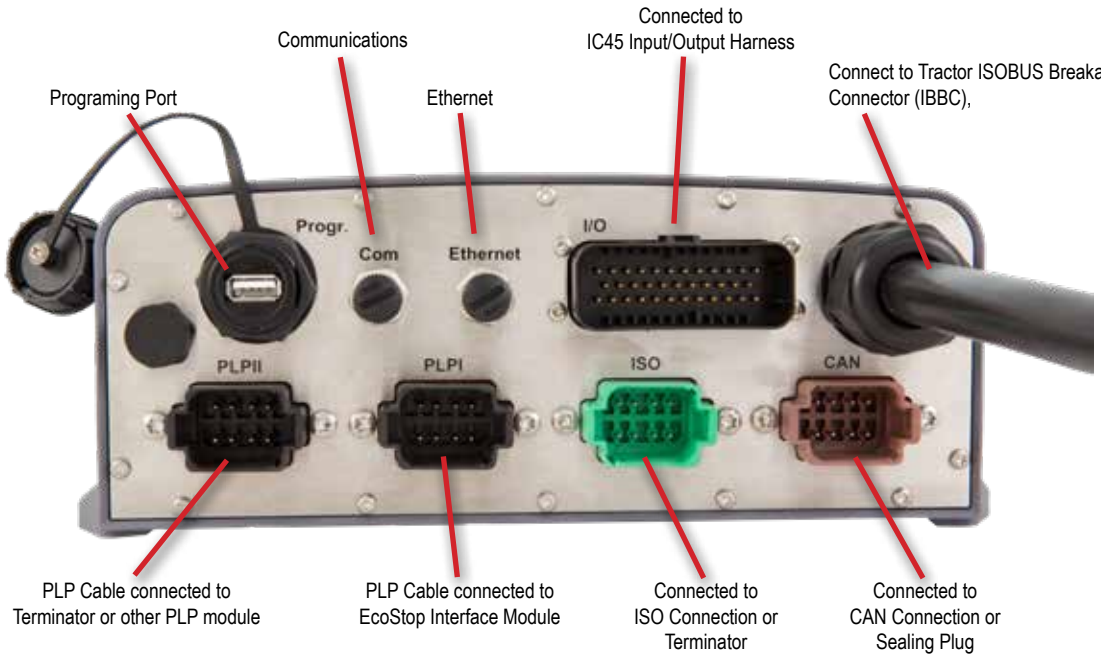
- ALWAYS READ AND FOLLOW THE CHEMICAL LABEL'S DIRECTIONS. Droplet size classification is in accordance with ISO 25358 at the date of publication. Classifications are subject to change. The chemical being sprayed, tank mixes, temperature, humidity, wind speed, vehicle speed, etc. can influence the actual drop size.

CHAPTER 1 – CONNECTIONS



**Connection Activity is dependent on software version.*

Figure 1: IC45 Connections

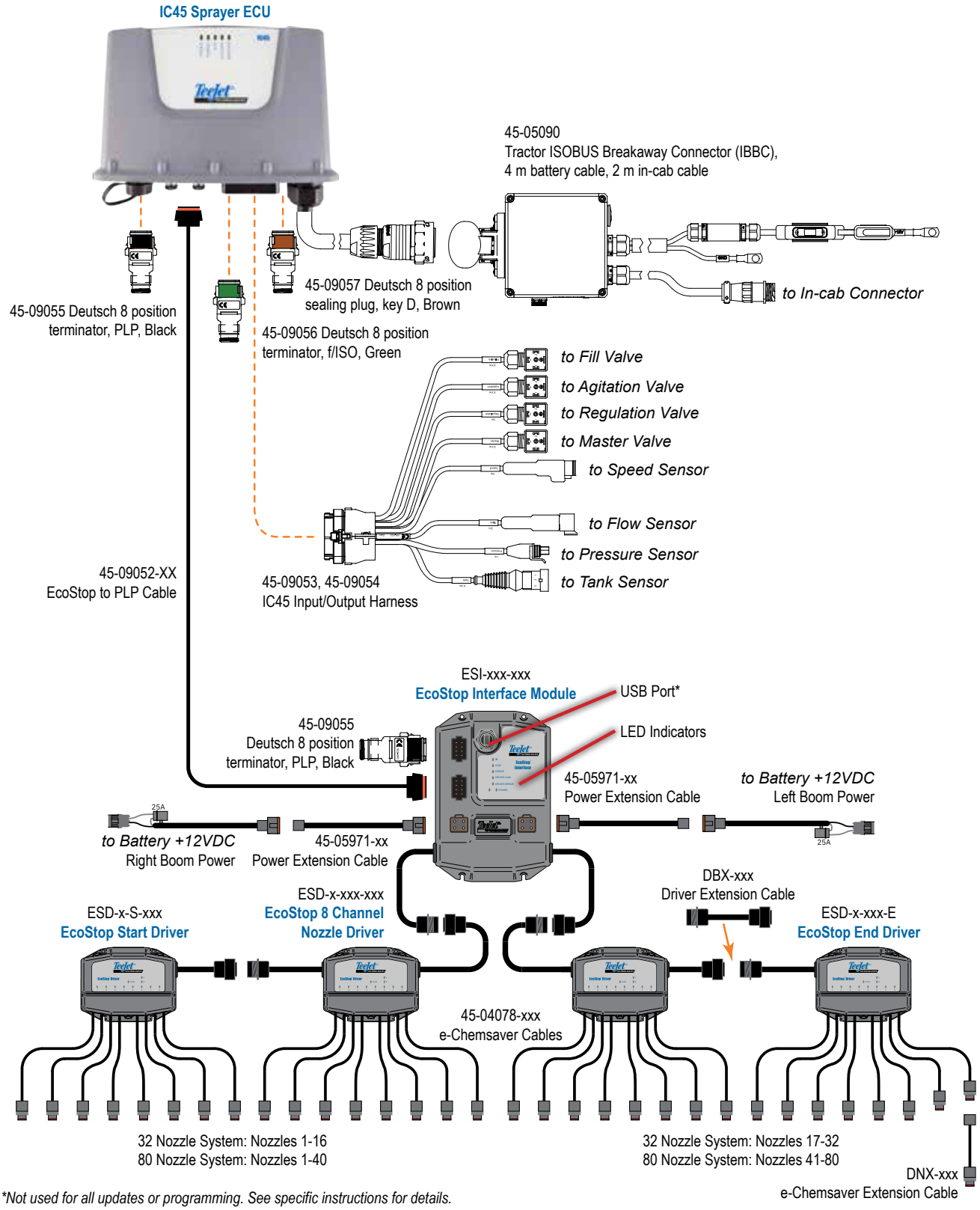


IC45 Sprayer with EcoStop

SYSTEM DIAGRAM

The following is to be used for general reference. Specific configurations will vary depending on available devices. Contact TeeJet Customer Service or your local dealer for information on your specific configuration.

NOTE: Connectivity to different devices may be released with future software releases. Always refer to software release notes for software/system connectivity at www.teejet.com/support/software.aspx.



**Not used for all updates or programming. See specific instructions for details.*

SPRAY SET

To use the IC45 in combination with the EcoStop system, a custom spray set must be installed on the IC45.
Spray sets should be provided by the precision farming representative. These will be customized to the machine and its connections.

Spray Set Installation

Prior to beginning the update, the software update file needs to be downloaded, unzipped and stored on a USB storage device (with at least 4GB of space).

RECOMMENDATION: Be parked while the update is in progress. This will help ensure that the update process is not interrupted by the USB drive bouncing around while the vehicle is in motion.

NOTES: The file is in a compressed zip format and needs to be unzipped/uncompressed before loading onto the USB drive.
The software update file can be used on multiple IC45 ECUs.

1. Copy and paste the "tjrun" folder to the root directory of an empty USB drive (at least 4GB).

   RECOMMENDATION: Use an empty USB drive. Be sure there are no other automatically executable files on the drive.

2. With the Universal Terminal (UT) console ON and the IC45 fully loaded, unscrew the Programming Port cover ❶ on the rear of the IC45 ECU.

3. Insert the USB drive directly into the IC45 ECU's Programing port (not the Universal Terminal's USB port).

   NOTE: Insert the USB Drive directly into the ECU or use a simple male to female extension cable. Do not use a USB hub as an extension.

4. The update will start automatically.

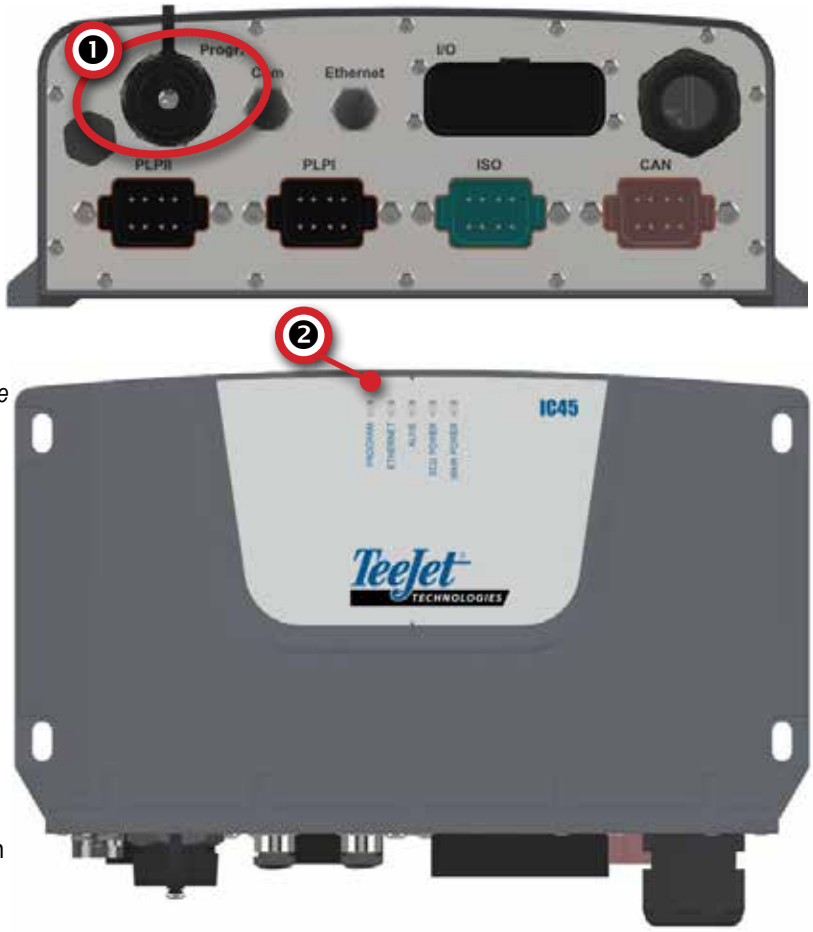
   WARNING!: *Do not remove the USB drive or start the vehicle engine or do anything else that may interrupt power to the system at any time during the update process.*

5. Wait for the programming to complete.

The Program LED ❷ will turn **RED** while the module is programming. Programming can take a few minutes.

When the module has completed programming, the Program LED ❷ will turn **GREEN**.

6. Once the Program LED ❷ turns **GREEN**, remove the USB drive.
7. Replace the Programming Port cover ❶. Tighten securely to avoid water leaks.
8. Restart the system.



WARNING! *If you forget to remove the USB drive before repowering the UT console you must allow the update to run to completion again. Powering down the UT console or removing the USB drive while a repeat update is in process will render the IC45 ECU unusable and it will have to be returned to TeeJet for service.*

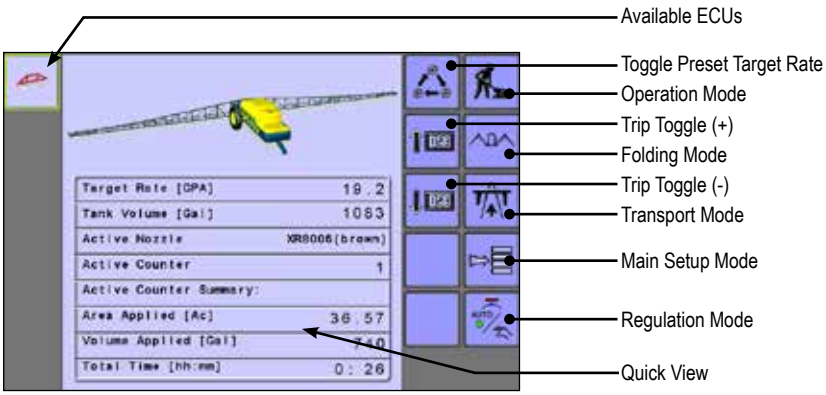
CHAPTER 2 – SCREEN OVERVIEWS

HOME SCREEN

The Home screen gives access to the IC45'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 2: 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 IC45 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

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 to toggle through the up to 16 trip count settings.

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

Figure 3: Home Screen - Trip Toggle

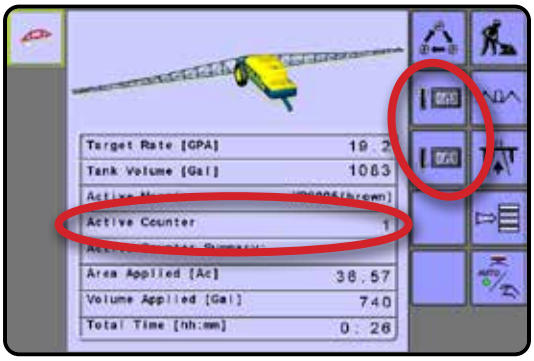
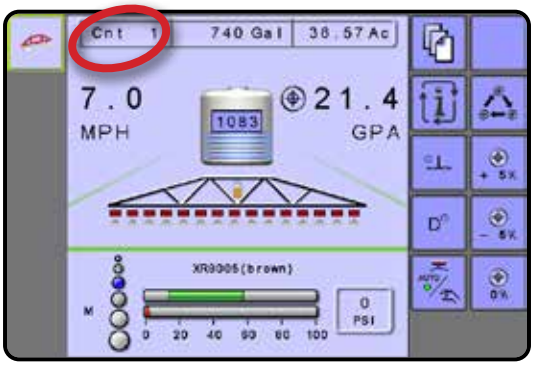


Figure 4: Active Trip Count Number on Operation Screen



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.

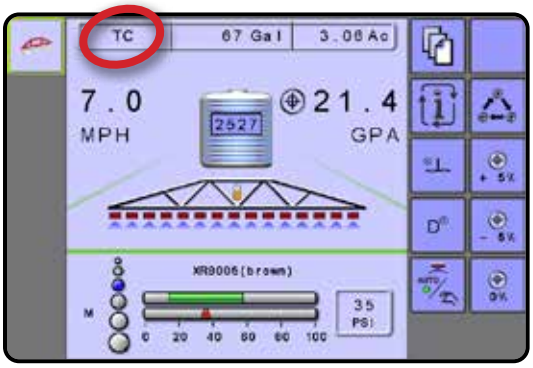
Task Controller Mode

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 5: 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 6: TC on Operation Screen



NOTE: If using a Task Controller, the Active Trip Count Number will display as “TC”.

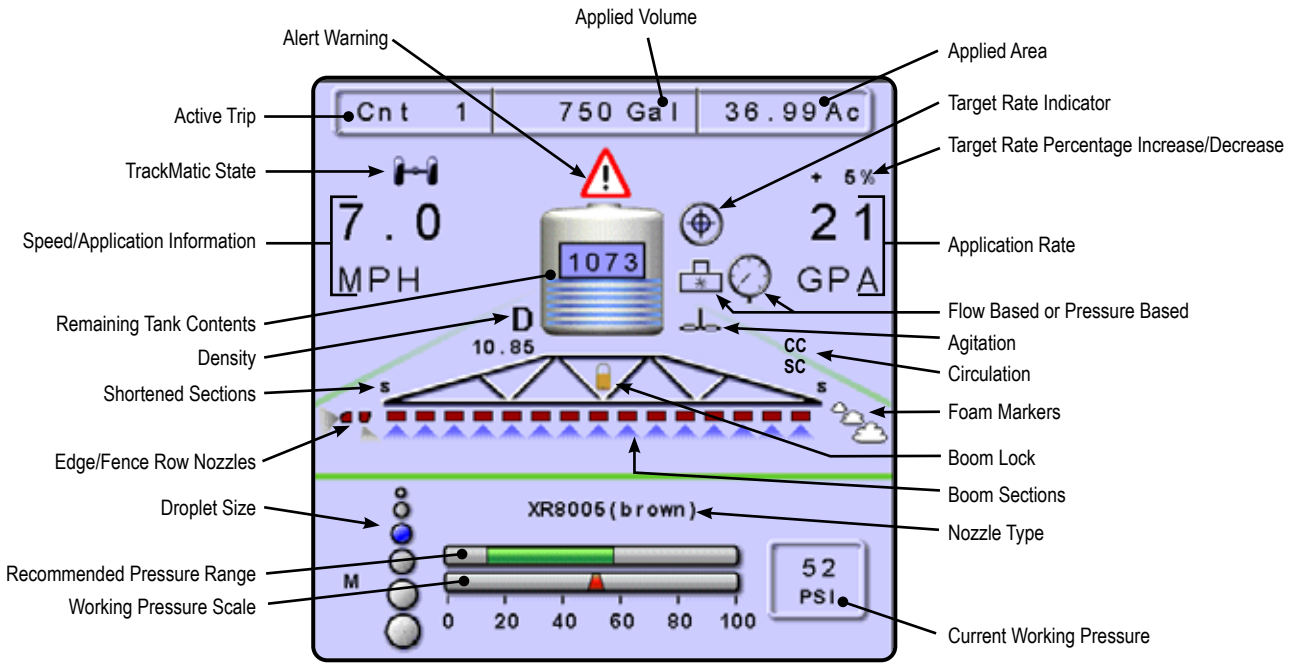
Clear Task Control Counter Information

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

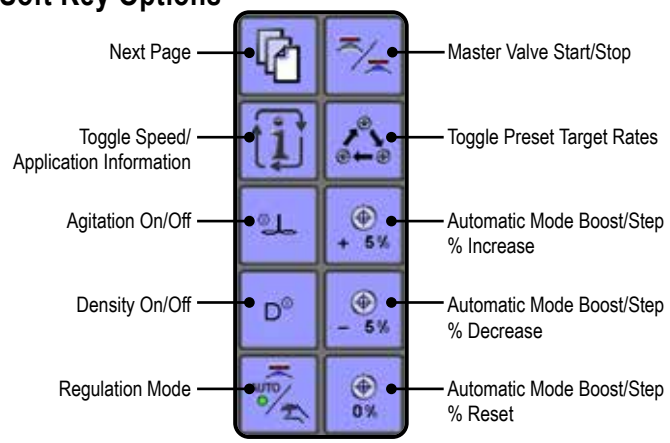
OPERATION MODE

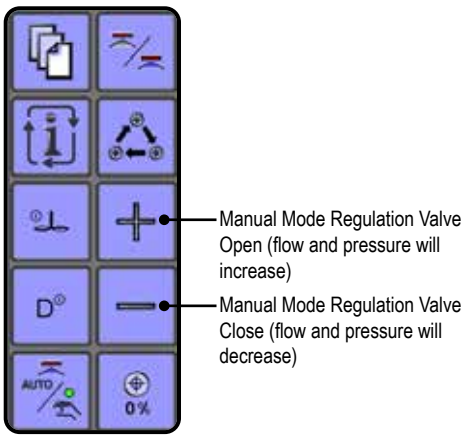
Information on the Operation screen will vary depending on the parameters set by the user and the OEM.

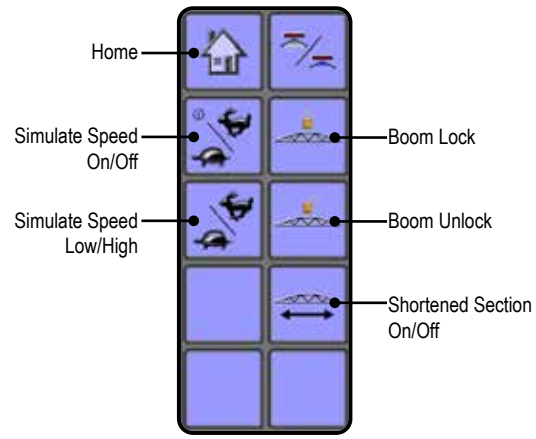
Figure 7: Operation Mode Screen Overview



Soft Key Options







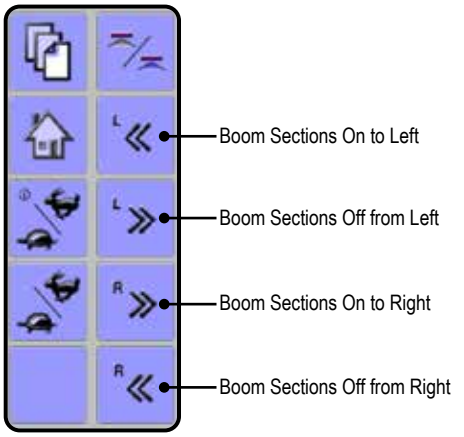


Table 1: Key/Button Descriptions

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.

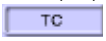
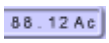
Target Rate Boost/Step Percent Increase Target Rate Boost/Step Percent Decrease	Establish the required boost percentage step, i.e. the step size, at which the application rate is to increase/decrease with the boost function.
Target Rate Boost/Step Percent Reset.	Reset the boost percentage step back to zero (0) percent.

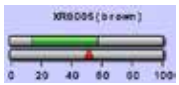
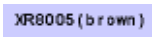
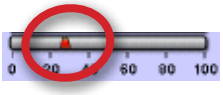
Manual Regulation Mode will retain an established regulation valve setting regardless of speed.

	Regulation Valve Manual Close – closes the valve to **increase** pressure
	Regulation Valve Manual Open – 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: Section/Icon Descriptions

Section/Icon	Description
Active Trip Information	This information bar displays the Active Trip Count number, Applied Volume and Applied Area. 
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  . Task Controller (TC) Mode – connected on an ISOBUS CAN with a TC device found, then TC will be displayed  .
Applied Volume	Displays volume applied. 
Applied Area	Displays applied area. 
Speed/Application Information	Displays vehicle speed, volume applied per minute, projected area covered per hour, projected total area remaining, time sprayed and actual working width. The INFORMATION KEY  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.*
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. 
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 Based – displayed if regulation is based on flow.
	Pressure Based – displayed if regulation is based on pressure.
Agitation	Displayed if an agitation valve is installed. Agitation ON  , Agitation OFF  .
Circulation	If Circulation is installed and selected in the OEM Menu, "SC" (Semi Circulation) or "CC" (Full Circulation) will be displayed. 
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 for access to Density settings in the Tank filling menu.*

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. 

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 8: 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

With a Switchbox

The IC45 ECU may operate with a switchbox or 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. Number of Nozzles and Number of Sections can be specified by the Spray Set or in the IC45 configuration.

- When the Number of Nozzles equals the Number of Sections, the boom sections are paired across the switches evenly and will work as individual sections in ASC mode.
- When the Number of Nozzles is more than the Number of Sections, the boom sections are paired across the switches and will work as full sections in ASC mode.

Information

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

- Vehicle Speed
- Volume Applied Per Minute
- Projected Area Per Hour
- Projected Total Area Remaining
- Application Time
- Actual Working Width

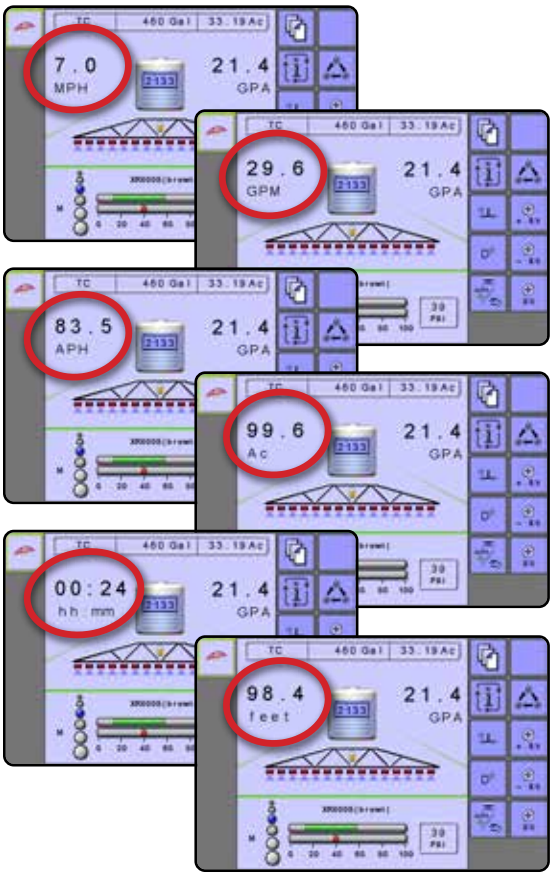


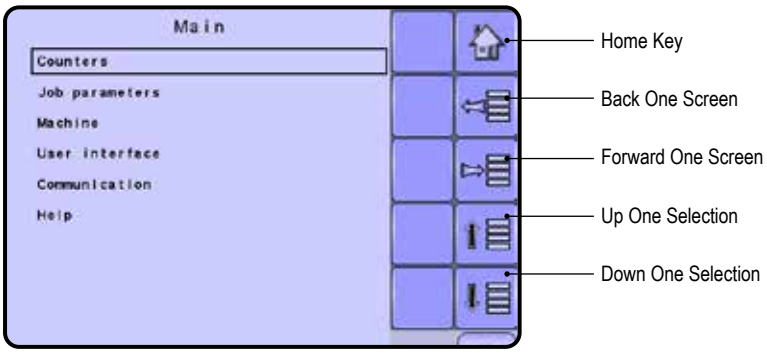
Table 3: Example of Pairing Key for 9 physical section switches operating with 10, 11, 12, 13, 14 and 15 Boom Sections

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

MAIN MENU

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

Figure 9: Main Setup Screen



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	
		▶ Section Width		▶ Test Section Valves	
		▶ Nozzle Preset Setup		▶ Universal Terminal (UT)	
		▶ Regulation Parameters		▶ TECU	
		▶ Shortened Sections		▶ Task Controller (TC)	
		▼ Calibrations		▶ PLP12 Safe State	
		▶ *Flow Sensor		▶ About	
		▶ *Liquid Pressure Sensor			
		▶ Implement Speed Sensor			
		▶ *Fill Flow Sensor			
		▶ *Tank Level Sensor			
		▶ *Wind Speed Sensor			
		▶ Alarm Configuration			
		▶ EcoStop			
		▼ OEM			
		▶ Sensor Presence			
		▶ Implement Parameters			
		▶ Implement Geometry			
		▶ Valve Setup			
		▶ Tank Setup			
		▶ TrackMatic			
		▶ Regulation Details			
		▶ Clear Total Counters			
		▶ Factory Settings			
		▶ PowerLink+			
		▶ Exhibition Mode			

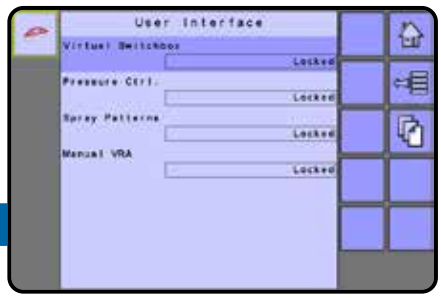
The OEM setup menu is password protected and the settings in this menu are directly related to the fitted OEM equipment.

**Menu settings directly related to OEM equipment.*

CHAPTER 3 – CONFIGURING

All settings are accessed from the Main Menu.

UNLOCK FEATURES



Select features may require an unlock.

Unlock codes can be entered in the User Interface options. Codes are unique to each IC45 ECU and are provided on a separate bulletin supplied with the IC45.

Enter any required unlocks before setting other options. Restart of the console is required.

IMPLEMENT SPECIFICATIONS

The implement dimensions entered on the IC45 may be shared with a guidance system as well. The active ISOBUS device on the guidance system will reflect these values in the device setup and can not be changed outside of the IC45 setup menus. Any changes to these implement dimensions will likely require a reboot of the system to properly share the updates with the guidance system.

We suggest configuring the implement settings in the following order.

Setting	Comments	Menu Location
1. Number of Implement Sections	Enter number of sections on sprayer. When associated with single nozzle application, enter number of nozzles on sprayer.	▼ Machine ▼ OEM* ▶ Implement Parameters
2. Nozzle Spacing	Enter spacing between nozzles. This will establish the number of nozzles per section once the Section Width is established. If this is changed after the Section Width, it could change the Numer of Nozzles per section.	▼ Machine ▼ Implement Parameters ▶ Regulation Parameters
3. Section Width	Enter individual width per section. When associated with single nozzle application, enter spacing between nozzles.	▼ Machine ▶ Implement Parameters
4. Connector Type	Select from: self-propelled, trailed, 3 point hitch, etc.	▼ Machine ▼ OEM* ▶ Implement Geometry
5. A = Connection X-offset	Enter the distance from vehicle hitch to sprayer axle.	▼ Machine ▼ OEM* ▶ Implement Geometry
6. B = Section X-offset	Enter the distance from sprayer axle to nozzle.	▼ Machine ▼ OEM* ▶ Implement Geometry

** OEM menu access requires a password. Password is 111.*

CONTROL SPECIFICATIONS

The control parameters are the settings that directly affect the regulation of the system.

Review each setting and make changes as needed for the machine's configuration.

Setting	Comments	Menu Location
Sensors Present	Select "Yes" for all of the sensors that are connected to the IC45.	▼ Machine ▼ OEM* ▶ Sensor Presence
Sprayer Mode	Select from: Crop sprayer, NH3, or Turf. *NOTE: Changing this will return all settings to default.*	▼ Machine ▼ OEM* ▶ Implement Parameters
Section Control On/Off Time	Enter the entry and exit delay values for ABSC.	▼ Machine ▼ OEM* ▶ Implement Geometry, page 2
Valve Position	Select from: Throttle or Bypass. This setting determines the valve rotation.	▼ Machine ▼ OEM* ▶ Valve Setup
Section Valve Type	Select from: 2 way or 3 way.	▼ Machine ▼ OEM* ▶ Valve Setup
Speed Source	Select from: automatic, ground based, wheel based, vehicle based or implement. The speed is able to be shared from a guidance console depending on selection.	▼ Machine ▶ Operation
Flow Sensor**		▼ Machine ▼ Calibration ▶ Flow Sensor
Flow Meter Calibration	Enter or calibrate the pulses per gallon/liter. 310 ppg / 82 ppl is calibration number for 801 flowmeter.	
Low Limit	Enter the minimum flow meter rating.	
High Limit	Enter the maximum flow meter rating.	
Liquid Pressure Sensor**	Calibrate each option in order.	▼ Machine ▼ Calibration ▶ Liquid Pressure Sensor
1. Calibrate No Pressure	Calibrate “No Pressure” establishes the calibration while no pressure is being applied to the liquid pressure sensor.	
2. 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.	
Minimum Regulation Pressure	Enter the minimum pressure at which when running in automatic rate mode, the rate controller will not regulate to a pressure lower than the entered value.	▼ Machine ▼ Implement Parameters ▶ Regulation Parameters
Valve Calibration Coarse and Fine	Enter values to fine-tune the valve. ▶ Coarse is when large adjustments are required. ▶ Fine is when small adjustments are required.	▼ Machine ▼ Implement Parameters ▶ Regulation Parameters

** OEM menu access requires a password. Password is 111.*

*** Not used if pressure sensor is not present.*

Setting	Comments	Menu Location
Liquid Density	Choose value if fertilizer is selected.	▼ Machine ▶ Filling

JOB SPECIFICS

These parameters configure the target application rate settings, current tip selected and other related application setup options.

Review each setting and make changes as needed for the machine's configuration.

Setting	Comments	Menu Location
Preset Application Rates	Establish up to 3 different rates that can be toggled on the operation screen.	▶ Job Parameters
Nozzle Preset Setup	Establish up to 5 preset nozzles to be available on the Job Parameters options.	▼ Machine ▼ Implement Parameters ▶ Nozzle Preset Setup
Nozzle Selection	Select the current nozzle being used.	▶ Job Parameters
Tank 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. Review each setting and make changes as needed.	▼ Machine ▶ Filling Or ▼ Operation Screen ▶ Select Tank
Simulated Speed	Select if available along with low speed, high speed and speed limit. Simulated Speed establishes a low and high speed to be used when using the Simulated Speed source for stationary spraying or testing.	▼ Machine ▶ Operation
Boost Percentage Step	Establish the percent of increase/decrease “boost” of the active application rate at which the product is being applied.	▼ Machine ▶ Operation

APPENDIX A – MODULES & DRIVER LED INFORMATION

ECOSTOP INTERFACE MODULE

LED:

Wi-Fi Status LED.

- Off: No Wi-Fi connection.
- On: Wi-Fi connection.
- Blinking at 2 Hz: Wi-Fi communication active.

LED: COM

Interface to PLP Controller CAN Bus Status LED.

- Off: No CAN Bus communications.
- 200 ms Pulse: CAN message received.
- 100 ms Pulse: CAN message transmitted.

LED: ERROR

Interface Error Status LED.

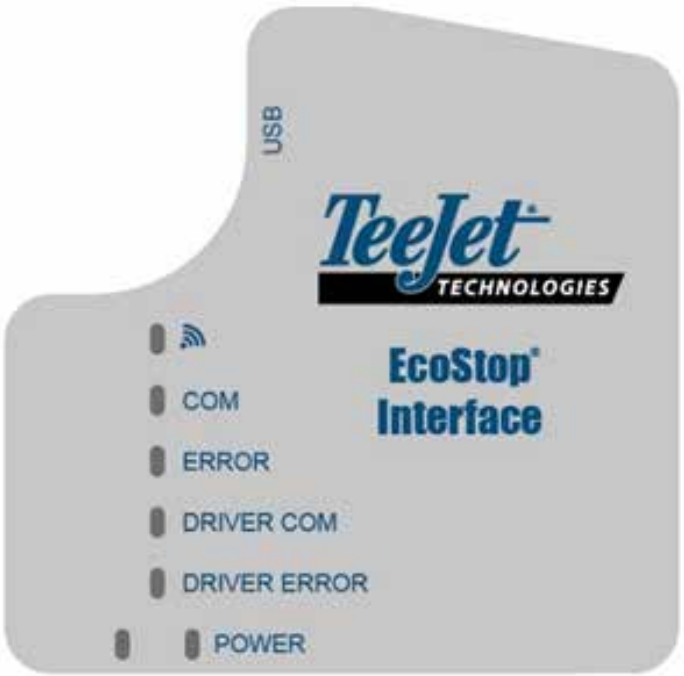
- Off: No Errors detected.
- PLP Mode Blinking:
  - 2 Hz Blink Rate: Nozzles detected not equal to Nozzles assigned to boom sections.

    NOTE: Nozzle assignment error disabled if "Extended Boom Status Message" used for nozzle on/off data.
  - 6 Hz Blink Rate: PLP Master Message not received time-out.
- Note: Nozzles turn off until problems are resolved.
- Power cycle to reset error.

LED: DRIVER COM

Interface to Driver Modules CAN Bus Status LED.

- Off: No CAN Bus communications.
- 200 ms Pulse: CAN message received.
- 100 ms Pulse: CAN message transmitted.



LED: DRIVER ERROR

Driver Error Status LED.

- Off: No Errors detected.
- Blinking at 2 Hz: Driver Error detected, look at Driver Module LEDs for error indication.
  - If no driver LEDs blinking, then End Terminator Not Found.
    - Outputs disable until problem fixed.
- Power cycle to reset error.

LED: POWER

Power Status LEDs.

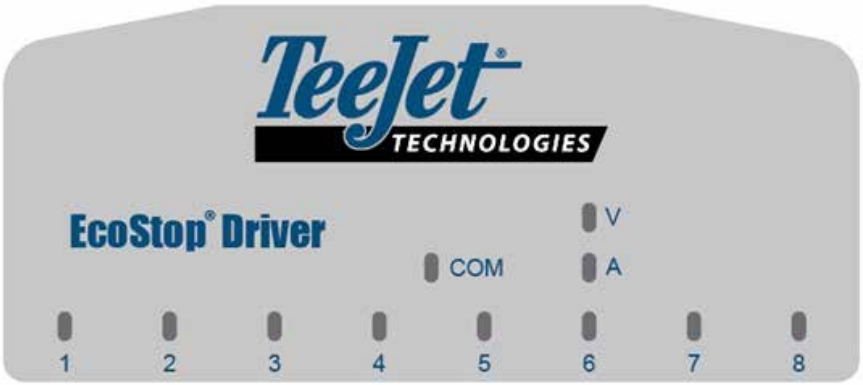
- Off: Left or Right Driver Power Off.
- On: Left or Right Driver Power On.

ECOSTOP DRIVER

LED: V (Volts)

Module Voltage Status LED.

- Off: Module voltage within high and low limits.
  - Default high limit: 16.0 V
  - Default low limit: 11.0 V
- Blinking at 6 Hz for high limit error.
- Blinking at 2 Hz for low limit error.
- Power cycle to reset error.



LED: A (Amps)

Module Amps Status LED.

- Off: Module current within high and low limits.
  - Default high limit: 1.20 A
  - Default low limit: 0.20 A
- Blinking at 6 Hz for high limit error.
- Blinking at 2 Hz for low limit error.
- Power cycle to reset error.

LED: COM

Module CAN Bus Communications Status LED.

- Off: No CAN Bus message communications.
- 200 ms Pulse: CAN message received.
- 100 ms Pulse: CAN message transmitted.
- Two 100 ms blinks then two second delay: No CAN Messages received time-out after 3 seconds.

LED: 1, 2, 3, 4, 5, 6, 7, 8

Individual Solenoid Status LEDs.

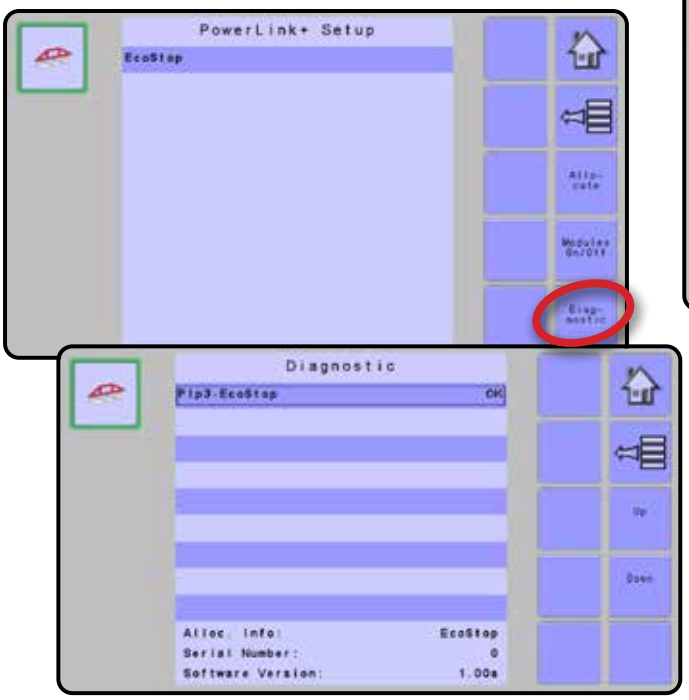
- Off: Normal Operation
- Blinking at 10 Hz: Missing solenoid detected at power up. (power cycle to recover)
- Blinking at 6 Hz: High current limit error.
- Blinking at 2 Hz: Low current limit error.
- Blinking at 1 Hz: Solenoid opening error.
- On power up all LEDs turn on and then go off one at a time when the solenoid CAN address is initialized.
- Two 100 ms blinks with two second delay: No CAN Messages received after 3 second time-out.
- Power cycle to reset error.

APPENDIX B – ECOSTOP INFORMATION

POWERLINK+ ECOSTOP ALLOCATION

Allocation of the EcoStop module is done from the PowerLink+ menu located in the OEM menu.

Diagnostic information is also available from this screen.



ECOSTOP INFORMATION

General information and error notifications are available on the EcoStop menu on the Machine menu.

TROUBLESHOOTING

Issue	Causes	Solutions
1. Number of Implement Sections does not match the number of nozzles on the sprayer	Invalid Spray Set installed	Install valid Spray Set
	Number of Sections in OEM-> Implement Parameters is incorrect	Change OEM-> Implement Parameters to match Spray Set
2. Configuration error	Part of the system is disconnected	Verify system connections
3. Number of nozzles per section is incorrect	Nozzle Spacing was changed after the Section Width was set	Verify all settings in order as specified in the table in "Implement Specifications" on page 12

See "Appendix A – Modules & Driver LED Information" on page 15 for information on module and driver LED indicators.

IC45 SPRAYER w/ ECOSTOP

REFERENCE GUIDE

Get started with these steps:

1. Connect hardware.
2. Install Spray Set.
   See "Spray Set Installation" on page 3 for details.
3. Configure implement settings.
   See "Implement Specifications" on page 12 for details.
4. Enjoy on/off spray nozzle control of up to 160 nozzles.

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