IC45 SPRAYER

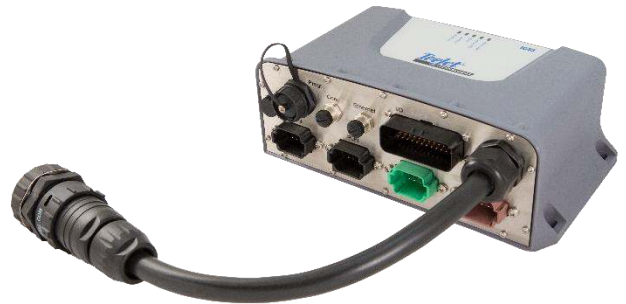### IC45 Sprayer v2.20

April 2025

Associated Documentation:

- User Manual 98-05365 R0

NOTE: Requires Switchbox software version 1.30 or later

Requires new configuration files if updated from 1.07 through 1.xx[1]

If used with DynaJet:

Requires DynaJet software version to be 1.60 or later

New Features:

- Information for various configuration files can now be added. Information will be shown in the user interface in the help menu.
- DynaTrack now supports two new functions: Automatic Wheel Centering and Auto Resume After Reversing.
  Functions require the sprayer to be equipped with quadrature speed sensors.
- DynaTrack now supports up to 6 different tire profiles.
- New PowerLink+ module (PLP21) (with both inputs and PWM output) can now be used together with IC45.
- Auto allocation of PowerLink+ is now possible.
- DynaAir modules are now supported by IC45.
- Manual AB line switching is now supported by default on IC45, when using the IC45 together with either PLP12 and/or DynaAir modules. Automatic Mode feature of AB line switching requires an unlock code for IC45
- Copying all settings from one IC45 to another is now possible.
- New nozzle series added to IC45.The general (ISO Standard) nozzle series supports non-TeeJet nozzles in the range of 015 to 20.
- New mounting offset calibration feature for DynaTrack module now available.
- Tank content on work screen can now be shown without color, for better visibility.
- Extra nozzles can now be used on IC45 when used together with EcoStop, DynaAir and DynaJet.
  Extra nozzles can also be used with PLP12 modules but will require more PLP12 modules (outputs) than are already mounted (as well as a new configuration file).
- All Air Sleeve functions can now be controlled from an ISOBUS Switchbox.
- Direct I/O pins on IC45 can now be used as trigger signals for e.g. bypass output.
- Disabling Alarm Settings for Upper Nozzle Pressure is now possible.
- Software version for DynaTrack has been updated to v2.30.
- Software version for PLP21 modules has been updated to v3.30.
- Software version for PLP12 modules has been updated to v2.20.
  These software will be automatically updated first time they turned ON connected to an IC45 with new software. Module software installs cannot be skipped.

Fixes

- Configuration file issue will no longer show pressure and flow reading incorrectly.
- Possibility of fluctuation in tank pressure sensor reading removed.
- Fixed "Object too big" warning on Topcon terminal.
- DynaTrack information always showed even if DynaTrack wasn't installed.
- Several Alarms were missing.
- Object pool could not load on UT that didn't have TC-GEO.
- Wasn't possible to store Hydraulic pump PWM 1 calibration value.
- Air sleeves fan was text too long.
- PLP status could show wrong status.
- Could have missing key with calibrating DynaTrack.
- DynaTrack values couldn't update properly.
- Name: "Boom Pressure Indication" has been changed to "Nozzle Pressure Indication".
- Duty cycle Min/Max PWM text corrected.
- Saturated nozzle alarm always showed.

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[1] *Updated for clarity April 2025*

- Some text was missing while using "night mode".
- Virtual switch box section number issue fixed.
- Using Shortened Section with DynaJet did not work properly.
- Camera icon showed in an incorrect location.

IC45 Sprayer v2.11

January 2025

Associated Documentation:

- User Manual 98-05365 R0
- Software Update Instructions 98-01619 R0

NOTE: Requires PLP12 software version 1.10 or later

Requires Switchbox software version 1.30 or later

Requires new configuration files if updated from 1.07 through 1.xx[2]

New Features:

- Added feature for usage of Air sleeves. Air sleeves is supported on both AUX and Switchbox.
- Added option for sprayers giving the possibility of sections having varying horizontal positions.
- Added support for the use of CHD air regulation valve when used together on a sprayer using a Fixed Displacement pump/Positive Displacement pump.
- Added switchbox configuration support, so one wire can control the section state. Only applicable for ISOBUS Switch Interface (903-050)
- Added In Cradle sensor feature – can specify which functions that are not allowed, when boom is In Cradle.
- Added feature which allows sections to always be on at power up.
- Added latest firmware for PLP12 modules V2.10
- Added latest fimware for DynaTrack V2.20
- Firmware for DynaTrack modules has been updated to version 2.20 – Now supports detection of reversing, and added feature where wheels will automatically center (if driving is detected) if communication with IC45 is lost, also fixes hillside compensation issue.

Fixes

- Corrects problem with naming confusion. Manual VRA changed to Multi Rate.
- Corrects problem with pressure using a Fixed Displacement pump/Positive Displacement pump above 6 bar/87 PSI while using DynaJet.
- Corrects problem where no information was given, if users' UT didn't support IC45 object pool – An image will now show up, stating this.
- Corrects problem where alarm wasn't working for No Flow Pulses.
- Corrects problem where information wasn't being correctly sent to ECO Stop Module.
- Corrects problem with option appearing that wasn't selectable.
- Corrects problem of showing incorrect pressure values in US units.
- Corrects problem with missing alarms when regulation was done via Pump PWM.
- Corrects problem with some units not showing work screen.
- Corrects problem where a test menu wasn't turning the testing parameters off after leaving the menu.
- Corrects problem with incorrect units being shown.
- Corrects problem where IC45 wasn't remembering certain entered values after a power cycle.
- Corrects problem where certain outputs weren't turned off when locking the boom.
- Corrects problem where incorrect speed information was sent throughout the system.

IC45 Sprayer v2.10

February 2024

Associated Documentation:

- User Manual 98-05365 R0
- Software Update Instructions 98-01619 R0

NOTE: Requires PLP12 software version 1.10 or later

Requires Switchbox software version 1.30 or later

Requires new configuration files if updated from 1.07 through 1.xx[3]

New Features:

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[2] *Updated for clarity January 2025*

[3] *Updated for clarity April 2024*

- Added the Background Spray feature to apply a background spray application on all active boom sections while simultaneously supporting Spot Spraying. Requires DynaJet® IC7140 v1.40 and a compatible Spot Spray system.
- Added a new control mode for applications where the flow is controlled by a hydraulic PWM valve varying the pump speed. i.e. there is no regulating valve.
- Added the Track Flow Offset feature when connected to DynaJet IC7140 – an alternate application rate can be set for the nozzles above each wheel track. Up to 4 nozzles can be assigned to each wheel track. Requires Individual Nozzle Shutoff unlock for DynaJet IC7140.
- Added the Boom Tip Flow Offset feature when connected to DynaJet IC7140 – an alternate application rate can be set for the outer nozzles. Up to 12 nozzles can be assigned to both outer nozzle groups. Requires Individual Nozzle Shutoff unlock for DynaJet IC7140.
- Added a Night Mode feature with a dark screen layout for less glare from the screen when operating at night.
- Boom fold/unfold is now possible without being in the boom folding page.
- Supports the display of values from a connected NMEA2000 (ISOBUS) weather station on the work screen. Requires an unlock code.
- Added support for 8 outputs (4 x constant/latched action and 4 x momentary action) from the PLP modules for multi-purpose customer use.
- Added a QR code for easy downloading of the TeeJet SpraySelect app. Available for both Apple® and Android® devices
- Added the DynaTrack (TrackMatic) Hill-side value to the data selection list on the work screen for systems that include TrackMatic.
- The IC45 software package now includes PLP12 and DynaTrack (TrackMatic) software. PLP module software will be automatically updated by the system as needed.
- Added support for a boom cradle sensor to indicate that the boom is positioned correctly for transport.
- Added support for a boom lock sensor to indicate if the boom is locked.
- Added DynaTrack (TrackMatic) as a speed source.
- Added DynaTrack (TrackMatic) auto center function when reversing.
- Added DynaTrack (TrackMatic) auto resume function after reversing.
- Added boom leveling state in the status bar and settings on the work screen if a TeeJet boom leveling system is connected.
- Added the PLP CAN loader version to the PowerLink+ diagnostic page.

Fixes:

- Corrects a performance issue with Multi-Rate (Manual VRA) when the system has many (40) segments.
- Corrects problem where the displayed pressure was the boom pressure and not the nozzle pressure.
- Corrects problem where it was not possible to delete the object pool.
- Corrects problem where the IC45 was not sending the correct section status to v2 ISOBUS switchboxes resulting in the LEDs on the switchbox displaying the wrong color.
- Corrects problem where attempting to change the language did not change the language.
- Corrects problem where it was not possible to enter a negative X boom offset if the boom is in front of the Device Reference Point (DRP).
- Corrects problem where the actual pressure (DDI 194) and tank volume (DDI 72) values sent to the Task Controller were incorrect.
- Corrects problem where a loss of communication between the UT and the PLP module(s) failed to turn off the output(s) from the PLP module(s). i.e. go to a safe state.
- Corrects problem where press-and-hold of the 'hydraulic pump RPM up' and 'hydraulic pump RPM down' soft-keys did not work correctly.
- Corrects problem where the Work Light was not turned off when the Beacon Light was turned on, on sprayers equipped with both lights.
- Corrects problem where updates from v1.07 to v2.0x failed if a custom splash screen image was used with v1.07.[4]
- Corrects problem with the Czech language where the font size was not displayed correctly on UTs that do not support proportional fonts.
- Corrects problem where enabling simulated speed would start the speed at 0 mph / 0 km/h and ramp up to the simulated speed setting. Now the set speed is used immediately when simulated speed is enabled.
- Corrects problem on systems with DynaJet IC7140 where if the DynaJet IC7140 regulation mode was set to Manual, and a change was made in an IC45 setting, the IC45 would errantly set the DynaJet IC7140 regulation mode to Automatic.
- Corrects problem where it was not possible to start tank filling from the DynaTank (TankMatic) unit.

IC45 Sprayer v2.02
December 2023
Associated Documentation:
- User Manual 98-05365 R0
- Software Update Instructions 98-01619 R0

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[4] *Updated for clarity June 2024*

NOTE: Requires PLP12 software version 1.10 or later

Requires Switchbox software version 1.20 or later

Requires new configuration files if updated from 1.07 through 1.xx[5]

New Features:

- Language package updated to now include: Czech, Danish, German, English, Spanish, French, Dutch, & Polish.
- Support for TeeJet EcoStop systems extended to 160 nozzles.

Fixes:

- Corrects problem where the hydraulic pump calibration values were not saved at the end of the calibration, resulting in the wrong pump RPM being targeted when running a system a) without DynaJet or b) with DynaJet in manual mode.

IC45 Sprayer v2.01

August 2023

Associated Documentation:

- User Manual 98-05365 R0
- Software Update Instructions 98-01619 R0

NOTE: Requires PLP12 software version 1.10 or later

Requires Switchbox software version 1.20 or later

Requires new configuration files if updated from 1.07 through 1.xx[6]

New Features:

- Software version of an ISOBUS Switchbox V2 can now be seen in the diagnostic page for the switchbox.
- Better looking icon that is more intuitive.
- Turf mode has been implemented.

Fixes:

- Boom movement wasn't always possible and depended on if IC45 was in idle screen, work screen or folding menu. Now boom can be moved without depending on which screen IC45 is in.
- Corrected unit when using US units.
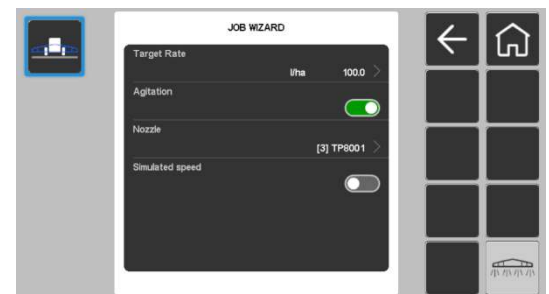
IC45 Sprayer v2.00

June 2023

Associated Documentation:

- User Manual 98-05365 R0
- Software Update Instructions 98-01619 R0

NOTE: Requires PLP12 software version 1.10 or later

Requires Switchbox software version 1.10 or later

Requires new configuration files if updated from 1.07 through 1.xx[7]

New Features:

- New User Interface/User Experience features including:
  - Work Screen enhancements
    - 5 user selectable data display areas.
    - Status bar showing active features e.g. simulated speed, operation mode, TrackMatic status.
  - Job Wizard for easier adjustment of select job settings.
  - Main menu and Machine menu reformatted in card-like layout with iconography
  - Menu organization restructured
  - Updated graphics and iconography
  - Adjusted screen colors
- User can select if alarms shall be shown as full screen alarms or as less intrusive notifications.

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[5] *Updated for clarity April 2024*

[6] *Updated for clarity April 2024*

[7] *Updated for clarity April 2024*

IC45 Sprayer v1.96

March 2023

This release was used for the development of the v2.00 release and was only available for select situations.

IC45 Sprayer v1.07

April 2023

NOTE: Requires PLP12 software version 1.10 or later

New Features:

- On systems with hydraulic pump speed control **and** a regulating valve:
  - The maximum pressure (pump speed) can be preset.
  - The pump speed on a circulating boom system can be preset for an All Booms OFF state.
  - Pressure spikes on DynaJet systems are minimized when switching from DynaJet Auto mode to Manual mode, and from DynaJet Manual mode to Auto mode.
  - PID regulation parameters can now be set for both low and high flow rates resulting in the regulation being more responsive and stable over a wide range of rates.
  - In Curve calibration for Hydraulic Pump control, the PWM2 setting can be preset to < 100% *before* doing the calibration to reduce the possibility of system damage from high pressure during calibration.
- The regulation valve is set to the Default Valve Position during power up and tank fill.
- Maximum frequency for the hydraulic valve controlling pump speed has been increased from 800 to 1200 Hz.
- Supports EcoStop v1.00 (release pending)
- Alarms for TrackMatic errors have been implemented.
- TrackMatic software version is now displayed in the Help page.

Fixes:

- Corrects problem when using the Manual VRA symmetric copy function that could result in the system becoming unresponsive.
- Problems corrected on systems with hydraulic pump speed control **and** a regulating valve:
  - With Master OFF, if the idle pressure setting could not be achieved within 2x the regulation valve speed time, the valve would go to the default position. Now the regulating valve remains full open and pump speed is maintained.
  - If in DynaJet Calculated flow mode and Master is OFF, the agitation valve remained closed. Now it is turned ON when in this state.
  - The Hydraulic pump calibration curve was not loaded correctly when changing to an alternate boom configuration.
  - The Fill Pump RPM was not deployed correctly from TankMatic v2 if set prior to activating the Tank Fill function.
  - System was sometimes slow to control to the correct pump speed when the Master switch was turned OFF.
- Corrects problem where the Shortened section mode was not deployed correctly on systems with DynaJet.
- Corrects problem where PLP modules may be missing during power up.
- Corrects problem where the Spray pattern "Previous Menu" button would only go back to the previous spray pattern page, not the previous menu.
- Corrects problem where a soft-key 'Press and Hold' action was not released when finger was slid off the soft-key
- Corrects problem where the number of boom sections on a DynaJet system was sometimes not retained through a power cycle.
- Corrects problem where the number of nozzles per section was not deployed correctly on machines that have both DynaJet and Classic mode configurations.
- Corrects problem where 'Bypass' functions in the Sprayset did not work correctly on systems that included DynaJet.
- Corrects problem where Manual VRA encoding was incorrect if Manual VRA was enabled before doing the encoding.

IC45 Sprayer v1.03

January 2023

NOTE: Should as minimum use PLP12 software version 1.10.

New Features:

- It is now possible to use the sprayer with and without DynaJet without changing the sprayset.xml file (sprayer/fertilized mode), since the configurations file supports two configurations. Selection is done from the GUI and requires a reboot.
- Added up/down control of incorporator (chemical tank) when used together with TankMatic
- Added PLP12 alarms when PLP12 has entered a safe state. This may happen when an output is overloaded.
- Added diagnostic page that provides detailed information about PLP12 safe state.
- Added encoding of the hysteresis for agitation on/off tank level.
- Added menu for enabling stop of agitation when filling is active.

Fixes:

- The maximum allowed current supply from an individual PLP12 output has been increased from 3A to 3.5A.
- Pressing two softkeys simultaneously will only activate one function.

IC45 Sprayer v1.02

July 2022

NOTE: Should as minimum use PLP12 software version 1.10.

New Features:

- External Master input can now be:
  - Steady +12 volts (Requires a 620 ohm resistor between the +12 volts and pin 1 of the IC45).
  - Pulse signal +12 volts. (Requires a 620 ohm resistor between the +12 volts and pin 1 of the IC45).
  - Steady GND
  - Pulse GND

  The input type is configured via the sprayset configuration file.
- Added the functionality to stop application outside of field boundary.
- Improved precision of tank volume measurement with tank level sensor.
- Added maximum pressure setting for hydraulic pump control modes.
- DynaJet IC7140 saturated nozzle information is normally shown as a part of the boom icon on the work page. This information can now be disabled. (Saturated nozzles are where the duty cycle has reached maximum or minimum value and action should be considered such as adjusting speed of vehicle.)
- DynaJet IC7140 and Pump menus have been moved to the Machine Setup menu for easier access.
- Improved Idle and Minimum pressure regulation in hydraulic pump setup, used for systems without DynaJet IC7140. It is now possible to encode a "Minimum Pump RPM Master OFF" and "Minimum Pump RPM Master ON".
  - "Minimum Pump RPM Master OFF", helps ensure enough pump pressure when idle pressure is active.
  - "Minimum Pump RPM Master ON" helps ensure enough pump pressure when minimum pressure has to be maintained while spraying. This is important if pump RPM is dependent on the vehicle speed and if the speed becomes so low, that pump RPM is not sufficient for maintaining adequate pressure.

Fixes:

- The power supply voltage value shown on the diagnostic page has been corrected.
- Hydraulic functions can now be controlled via AUX control devices (example: ISOBUS Joystick).
- Fixed unlock codes for bed application features: Section Pattern (allows setups with manually made nozzles on/off patterns) and Manual VRA (allows for different rates across the boom).
- The information softkey on work screen is now working correctly.
- Corrected update of ISM switchbox section status after a power cycle.
- When operating DynaJet IC7140 in flow mode, the red warning arrow on the work screen located next to the pressure bar graph could lock-up.
  - If DynaJet IC7140 configuration "Keep Flow" is ON, then pressure is increased/decreased depending on vehicle speed. If pressure falls out of selected drop size range, the warning is shown, so vehicle speed can be adjusted.
- Corrected LED colors on ISOBUS switchbox v2.
- "Agitation opposite master" setting is now working correctly.

IC45 Sprayer v1.01

May 2022

Key Features and Benefits:

- Global first release of IC45 series
- ISOBUS sprayer controller
- Based on newly developed hardware, enclosure, and connector concept, but providing same type of functionality as the existing IC35 product
- Includes features like VRA and support for Spot spray sensors when combined with DynaJet IC7140
- Includes also following features offered via unlock codes:
  - Pressure Control Device: Support for Ramsay valve
  - Spray Pattern: Configuration of sections to support Bed Applications and more.
  - Manual VRA: Manual Variable Rate to support Bed applications and more. This feature requires DynaJet availability.
  - Virtual Switch box: A graphical representation of a switch box which allows for easy on-screen manual control of individual sections.

- Can interface with a range of TeeJet developed distributed modules to provide functionality on top of the core control of the sprayer. This release covers for this reason also the release of following supporting software packages:
  - PLP12 version 1.00: PowerLink+ module with 12 outputs for control of sections and/or On-Off control of hydraulic functions.
  - PLP25 version 1.00: PowerLink+ module for active steering of trailer wheels or trailer drawbar pivot point to track the wheels of the tractor during turns.
  - TankMatic Small version 2.00: External 2.8'' display to control the tank filling process.
  - TankMatic Medium version 2.00: External 4.3'' display to control the tank filling process.
  - ISOBUS Single Row Switch Box version 1.00: Proprietary ISOBUS switch box for easy manual control of section status.
  - ISOBUS Double Row Switch Box version 1.00: Proprietary ISOBUS switch box for easy manual control of section status and hydraulic functions.

www.teejet.com

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