EcoStop

USER GUIDE

TeeJet ®
TECHNOLOGIES

98-01624 R0

EcoStop

Table of Contents

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.

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WARNING! PRESSURISED 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 pressurised.
- 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! PRESSURISED SPRAY SYSTEM

- It is important to recognise proper safety precautions when using a pressurised 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 authorised 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.

EcoStop

CHAPTER 1 – CONNECTIONS

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.
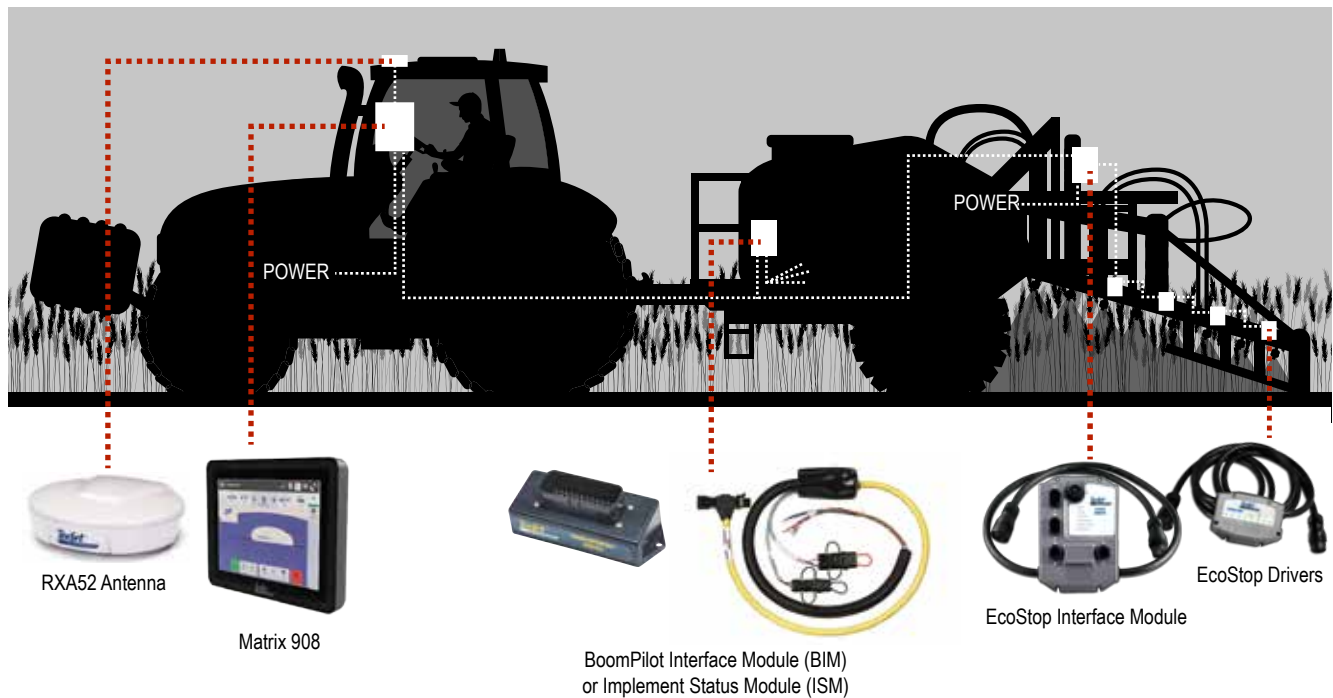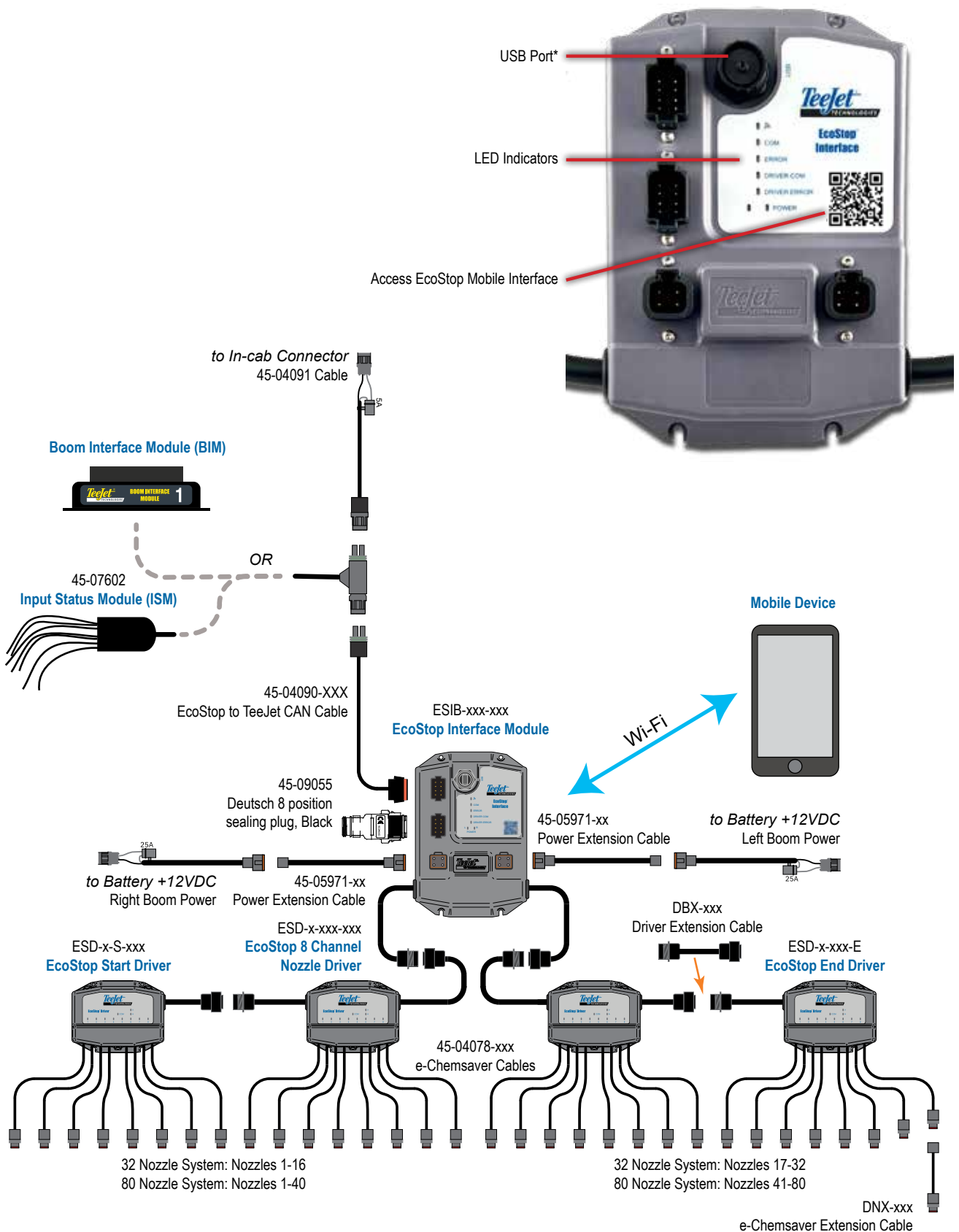

RXA52 Antenna

Matrix 908

BoomPilot Interface Module (BIM)
or Implement Status Module (ISM)

EcoStop Interface Module

EcoStop Drivers

Figure 1: System Diagram

USB Port*

LED Indicators

Access EcoStop Mobile Interface

to In-cab Connector
45-04091 Cable

5A

Boom Interface Module (BIM)

BOOM INTERFACE MODULE 1

45-07602
Input Status Module (ISM)

OR

Mobile Device

45-04090-XXX
EcoStop to TeeJet CAN Cable

ESIB-xxx-xxx
EcoStop Interface Module

Wi-Fi

45-09055
Deutsch 8 position
sealing plug, Black

45-05971-xx
Power Extension Cable

to Battery +12VDC
Left Boom Power

25A

25A

to Battery +12VDC
Right Boom Power

45-05971-xx
Power Extension Cable

DBX-xxx
Driver Extension Cable

ESD-x-S-xxx
EcoStop Start Driver

ESD-x-xxx-xxx
**EcoStop 8 Channel
Nozzle Driver**

ESD-x-xxx-E
EcoStop End Driver

45-04078-xxx
e-Chemsaver Cables

32 Nozzle System: Nozzles 1-16
80 Nozzle System: Nozzles 1-40

32 Nozzle System: Nozzles 17-32
80 Nozzle System: Nozzles 41-80

DNX-xxx
e-Chemsaver Extension Cable

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

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Boom Interface Module Harness Connection

With each machine having a different possible switchbox configuration, the location to T-Tap into the valve harness cannot be specified. However, the following guidelines may provide some assistance in completing the installation.

1. Identify boom section cable that runs from the Boom Switchbox to the boom valves.

2. Use a T-Tap (or similar product) to connect into the signal wire.

> NOTE: In some cases, the Boom Interface Module Harness wires can be connected directly to the switches inside the Switchbox using the proper spade terminal.

3. Repeat this process for each individual boom section.

Figure 2: Boom Interface Module Harness Connection
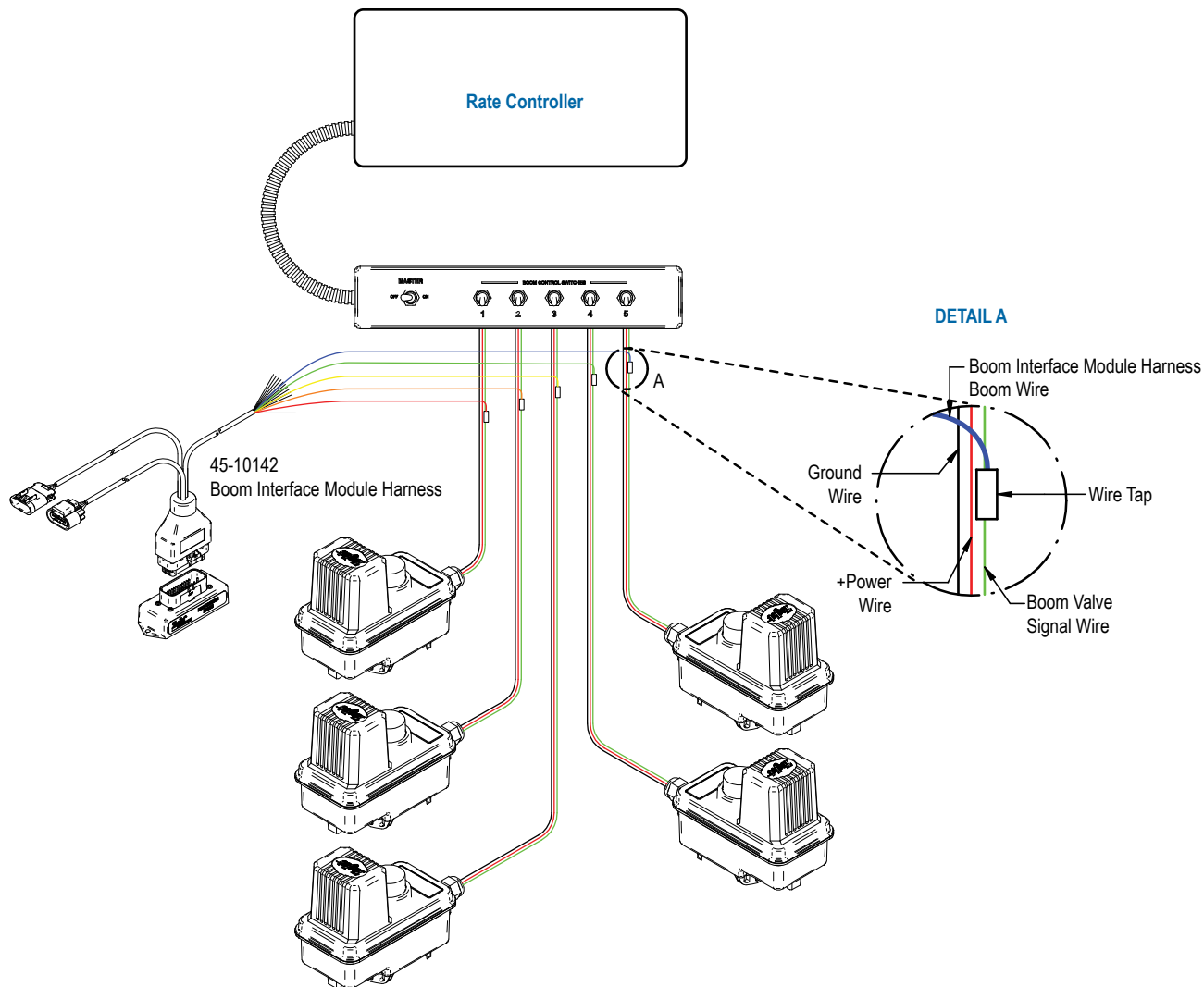
CHAPTER 2 − ECOSTOP MOBILE INTERFACE

Establish specific section configurations using the EcoStop Mobile Interface.

Connect to the EcoStop Mobile Interface

Establish connection to the Wi-Fi access point. See "Wi-Fi Access Connection" on page 11 for details..

Using a web browser on your mobile device, go to **http://ecostop.info**

or use the QR Code on the EcoStop Interface Module
or one of the included stickers.

Header Bar

Verify Current Boom Configuration

Verify that the current number of sections and established number of nozzles per each section match the current boom configuration, and that the Nozzles Detected is valid.

▶ On the Work screen 👷, verify the Total Sections and Total Nozzles shown on the information bar are correct.

▶ On the Configure screen ⚙, verify Number of Sections and each Nozzle per Section.

Get to Work

Switch on/off state on the rate controller will be overrode by the current mobile interface state.

All Sections

On the Work screen 👷, use the Start/Stop All Sections buttons 🟢 🔴 to control application.

Individual Section

On the Work screen 👷, use the Decrease/Increase buttons ⊟ ⊞ to select an individual section.

Use the Start/Stop Individual Section buttons 🟢 🔴 to control application.
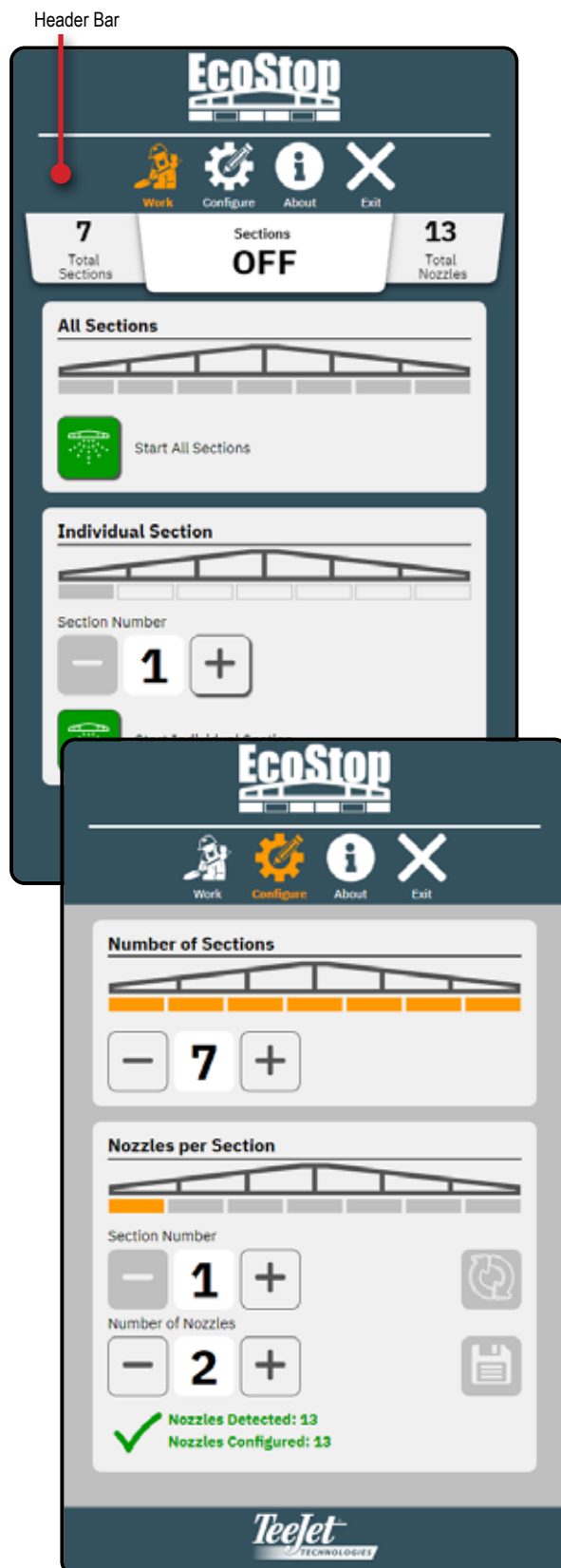
EcoStop

INITIAL STARTUP & CONFIGURATION

The first time the system is powered up and the EcoStop Mobile Interface is accessed, the configuration of the boom is incomplete.

1. Connect your device to the Wi-Fi access point. See "Wi-Fi Access Connection" on page 11 for details.

2. Connect to the EcoStop Mobile Interface using a web browser on your mobile device:

   ▶ Go to **http://ecostop.info**

   ▶ Use the QR Code on the EcoStop Interface Module or one of the included stickers.

3. On first start up, go straight to the Configure screen ⚙ ❶.

4. Set the number of sections ❷.

5. Set the number of nozzles per individual section ❸.

6. With a valid configuration, save 💾 the configuration ❹.

7. Return to the Work screen 🚶.

   ◀ Switch on/off state on the rate controller will be overrode by the current mobile interface state.

8. Use the Exit button ✖ to disconnect the EcoStop Mobile Interface.

WI-FI ACCESS CONNECTION

Before one can use the EcoStop Mobile Interface, a Wi-Fi connection to the EcoStop Interface Module must be established.

1. Select the Wi-Fi network as noted on the ECU Label.

2. Enter the network's password: **TeeJetTech**

3. Disengage the Auto-Join option for the selected network in the network's information options.

4. Connect to the EcoStop Mobile Interface. Wi-Fi connection will disengage if not connected to the mobile interface within 60 seconds.

When connected, Wi-Fi 📶 LED on the EcoStop Interface Module will be on.
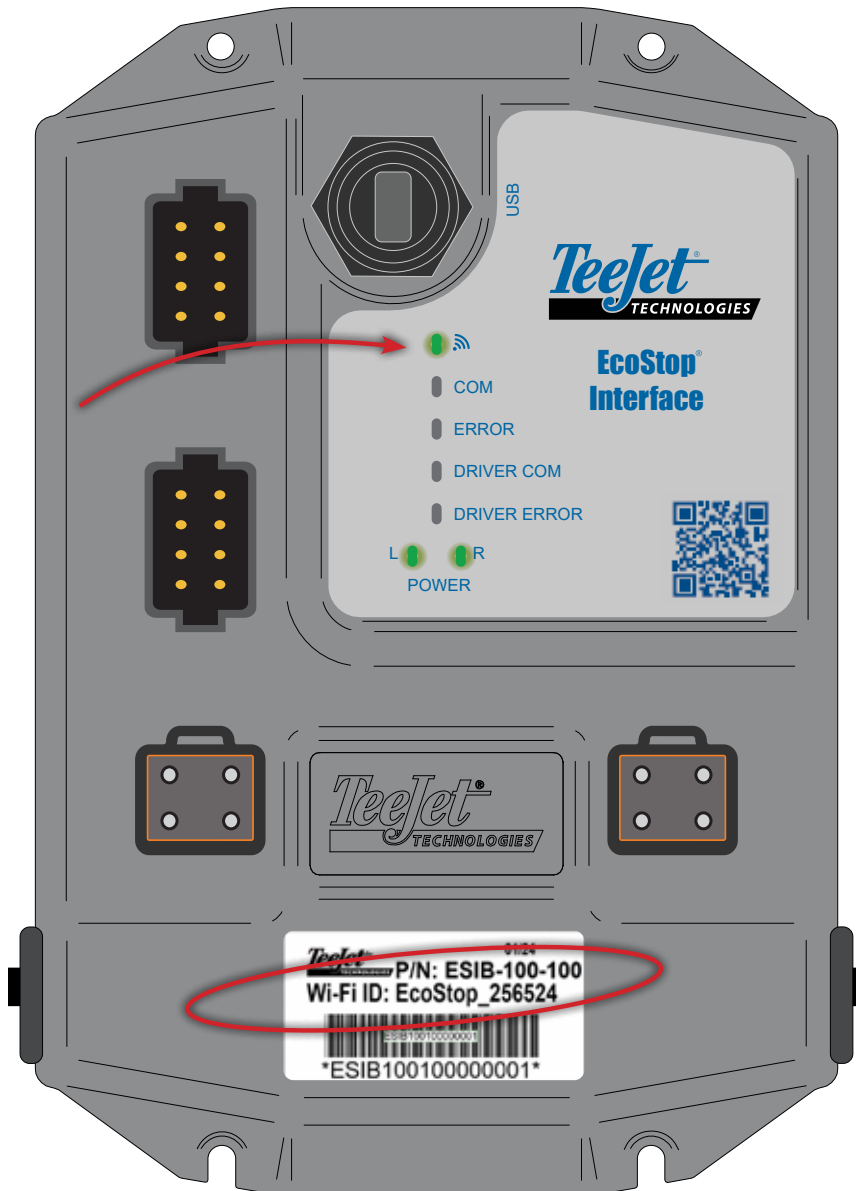
EcoStop

Connect Your Apple Device

How to connect your device to the EcoStop Wi-Fi network. Only one mobile device may connect to the EcoStop Wi-Fi network at a time. It is recommended that any automatic joining option be disabled.

1. From your Home screen, go to Settings -> Wi-Fi.

2. Turn on Wi-Fi. Your device will automatically search for available Wi-Fi networks.

3. Tap the name of the Wi-Fi network as noted on the ECU Label.
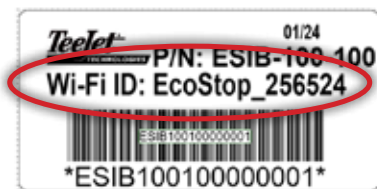
4. Enter the network's password: **TeeJetTech**
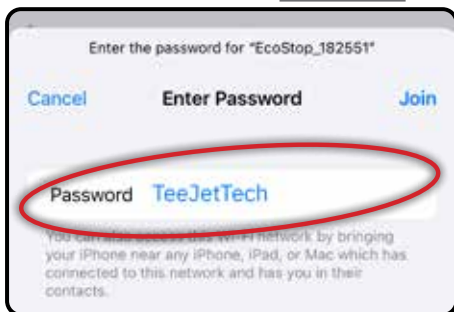
After you join the network, you'll see a blue checkmark ✓ next to the network and the connected Wi-Fi icon 🛜 in the upper corner of your display.

5. Disengage the Auto-Join option for this network in the network's information options.
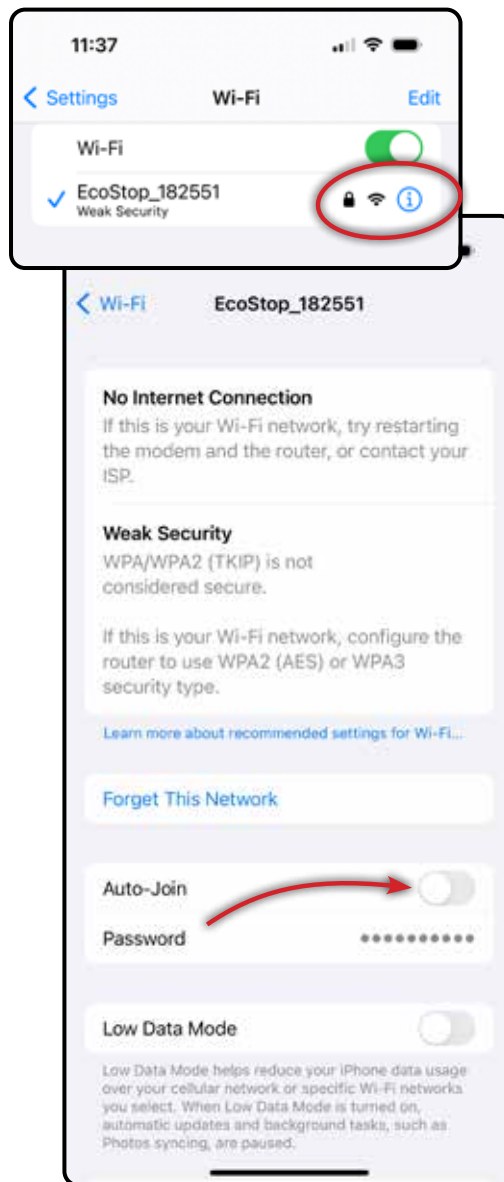
Not Connected to the Internet Message

If prompted that the network does not appear to be connected to the internet, select **Keep Trying Wi-Fi**.

Connect Your Android Device

How to connect your device to the EcoStop Wi-Fi network. Only one mobile device may connect to the EcoStop Wi-Fi network at a time. It is recommended that any automatic joining option be disabled.

1. Open your device's Settings app.

2. Under Connections or Network & Internet, select `Wi-Fi`.
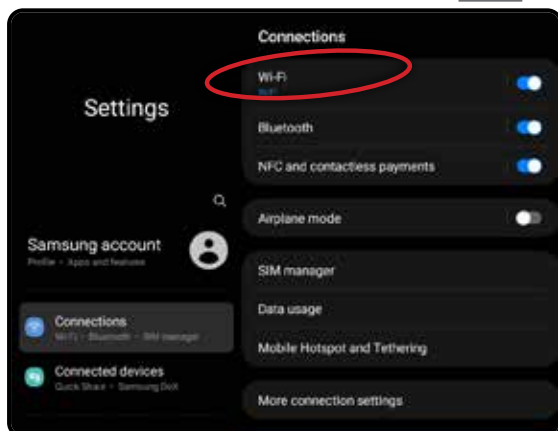
3. Turn on Wi-Fi. Your device will automatically search for available Wi-Fi networks.
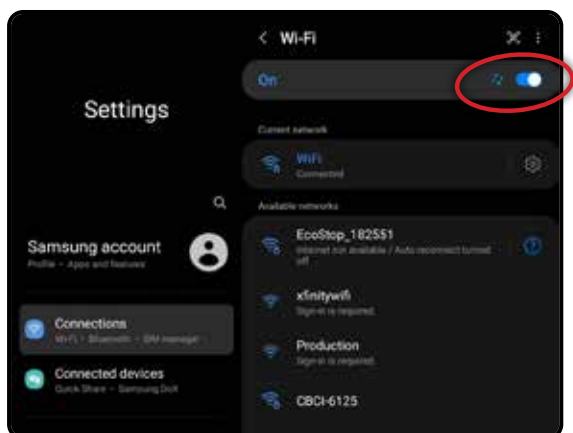
4. Tap the name of the Wi-Fi network as noted on the ECU Label.
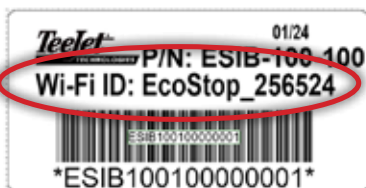
5. Enter the network's password: `TeeJetTech`.

6. Disengage the Auto-Join option for this network in the network's information options.

7. Select `Connect`.
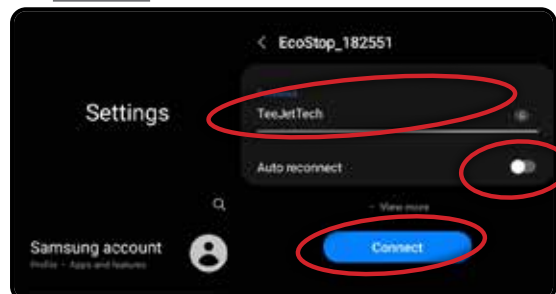
After you join the network, you'll see it listed under Current Network and the connected Wi-Fi icon in the upper corner of your display.
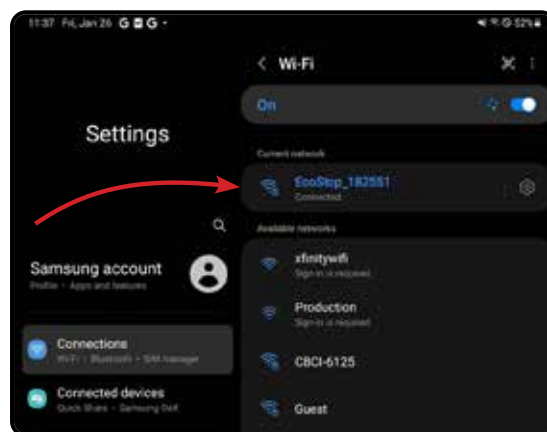
Internet May Not Be Available Message
If prompted that the network does not appear to be connected to the internet, select `Always connect`.

EcoStop
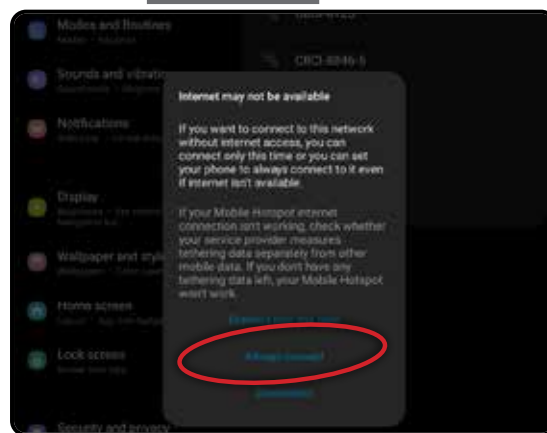
CONFIGURE

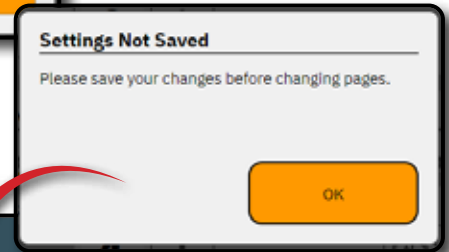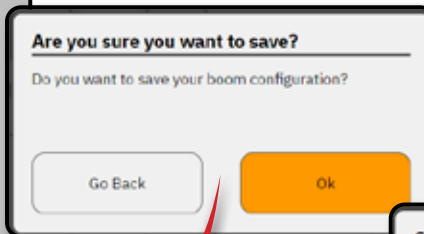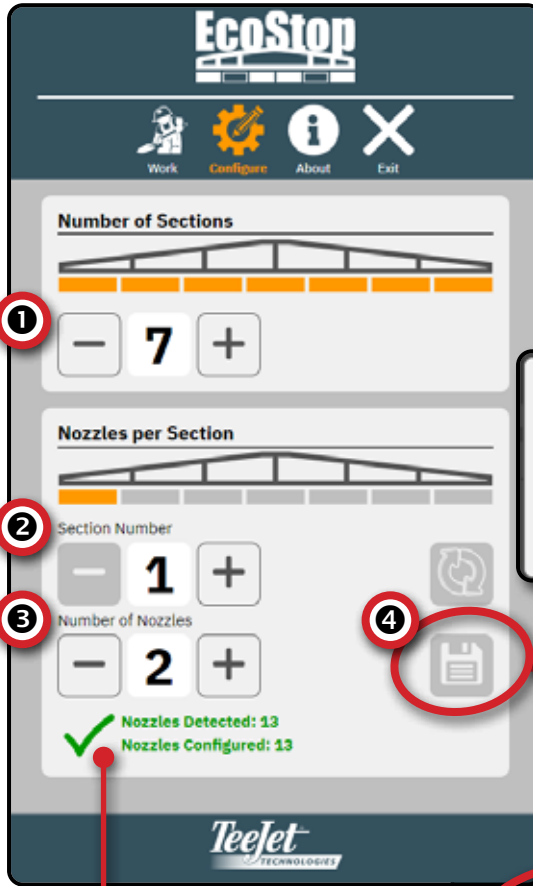Establish and adjust the boom configuration on the Configure screen 🛠️.

1. Set the Number of Sections using the Decrease/Increase buttons ⊟ ⊞ ❶.

2. Set the Nozzles per Section.

◄ Select the Section Number to be configured using the Decrease/Increase buttons ⊟ ⊞ ❷.

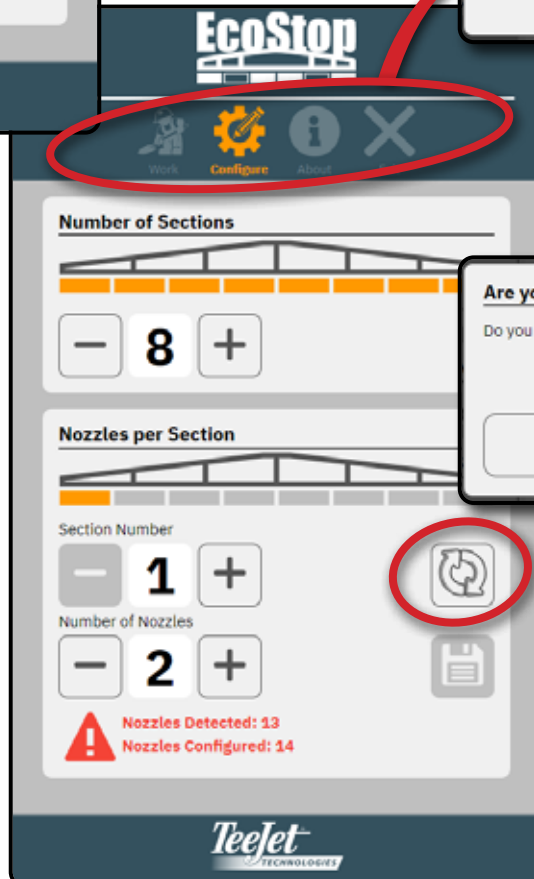◄ Set the Number of Nozzles for the selected Section Number using the Decrease/Increase buttons ⊟ ⊞ ❸.

3. With a valid configuration, use the Save button 💾 to set the configuration ❹.

Are you sure you want to save?

Do you want to save your boom configuration?

| Go Back | Ok |

Settings Not Saved

Please save your changes before changing pages.

OK

Header Bar is unavailable without a saved, valid configuration. Save 💾 changes or Reset 🔄 to previously saved configuration.

Are you sure you want to restore?

Do you want to restore your boom configuration?

| Go Back | Ok |

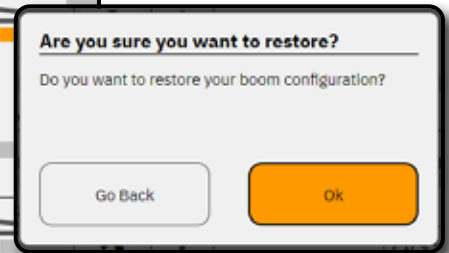Reset Settings – use to reset settings to the previously saved configuration.

Configuration Validation

✔️ Valid Configuration – nozzles detected from the BIM or ISM and nozzles configured are equal

⚠️ Invalid Configuration – nozzles detected from the BIM or ISM and nozzles configured are not equal
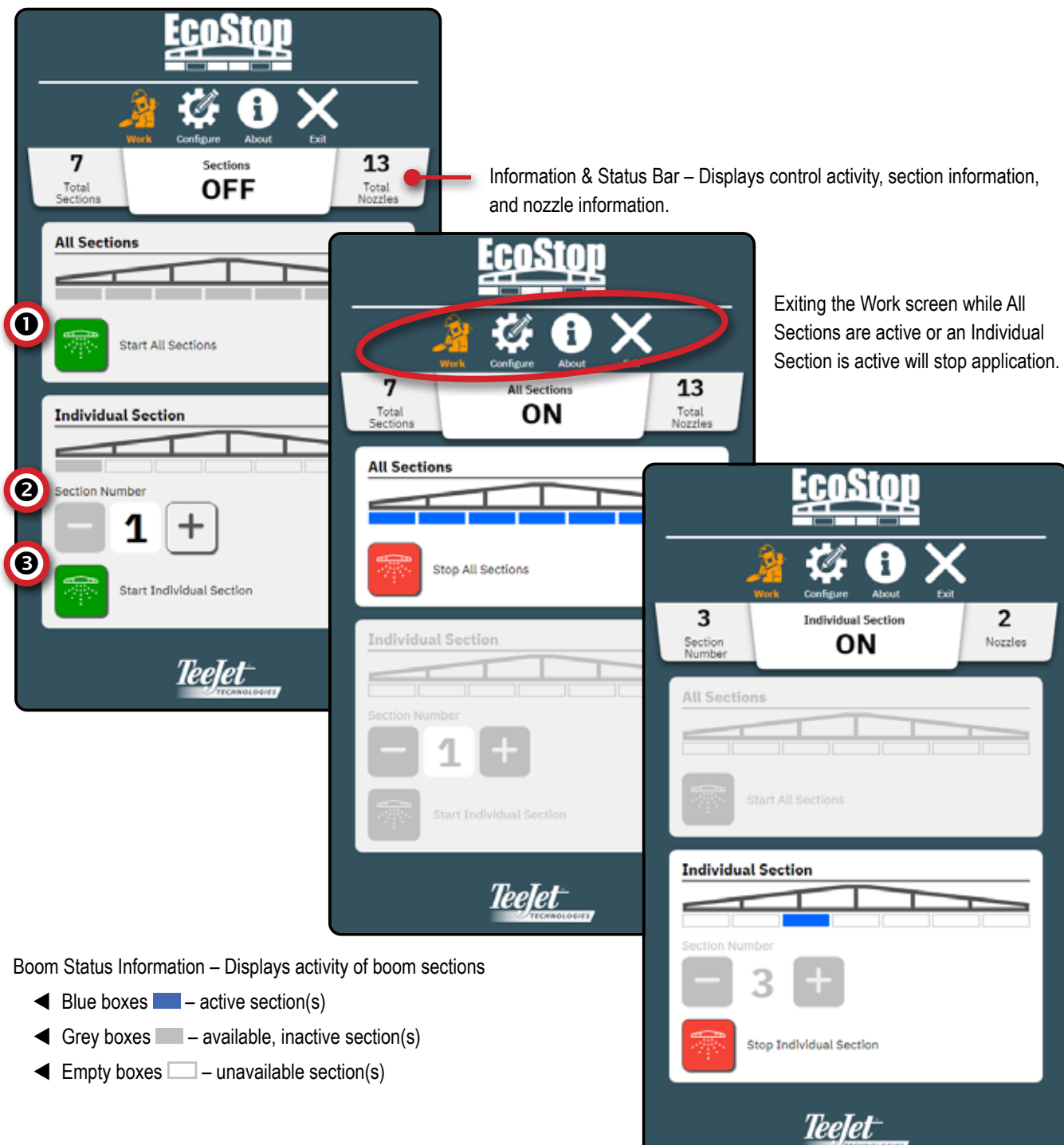
WORK

Start and stop sections on the Work screen 🏃.

Control All Sections
1. Use the Start/Stop All Sections buttons 🟩 🟥 to control all sections ❶.

Control an Individual Section
1. Set the Individual Section using the Decrease/Increase buttons ─ + ❷.

2. Use the Start/Stop Individual Section buttons 🟩 🟥 to control the selected section ❸.

Information & Status Bar – Displays control activity, section information, and nozzle information.

Exiting the Work screen while All Sections are active or an Individual Section is active will stop application.

Boom Status Information – Displays activity of boom sections

◀ Blue boxes ▮ – active section(s)

◀ Grey boxes ▮ – available, inactive section(s)

◀ Empty boxes ▢ – unavailable section(s)

EcoStop

ABOUT

The About screen ℹ️ displays current software version for the EcoStop Mobile Interface and accesses software update options. Software updates will be made available at www.teejet.com as needed.

Software Updates

1. Follow the on screen instructions.

2. Once receiving the "Firmware update complete" screen, restart the system to ensure boom information is reported correctly.

3. Reconnect to the EcoStop Mobile Interface.

4. Verify the new software version is specified in the Information section.

Information – Displays current software version.

EXIT

The Exit button ✕ should be used to disconnect the device from the EcoStop Wi-Fi network.
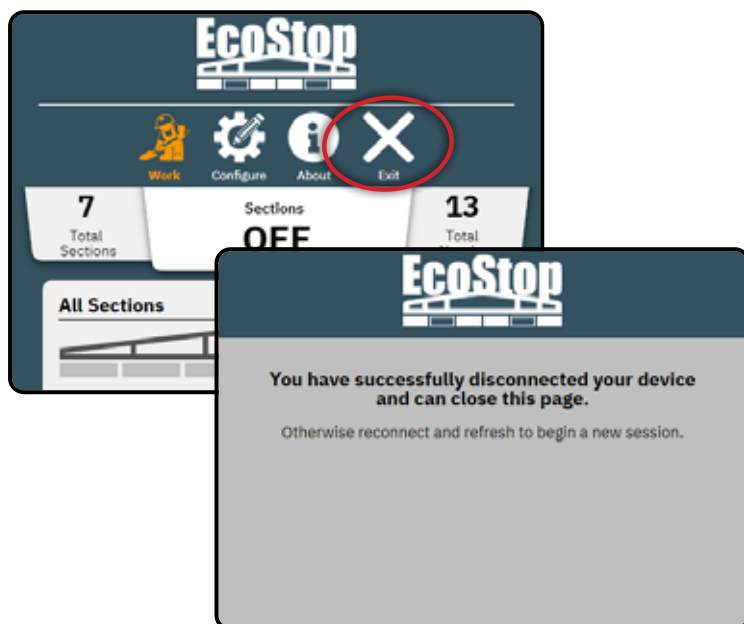
Inactivity Disconnect

The Mobile Interface will automatically disconnect from the EcoStop Wi-Fi network after five minutes of inactivity.

Closing the web browser will not disconnect the EcoStop Wi-Fi network. Control is returned to the switchbox and the Mobile Interface will disconnect from the network after one minute of inactivity.

TROUBLESHOOTING

Issue	Causes	Solutions
1. Cannot Access Mobile Interface	Using incorrect address: • **https**://ecostop.info • http://ecostop.**com**	Enter the proper address or use the provided QR Code.
2. Cannot Access Mobile Interface	Wi-Fi connection timed out	Reconnect to the EcoStop Interface Module.
3. Number of Nozzles Detected are not what is expected	Part of system may be unplugged	Check all connections on system.
4. Software version did not change after update	Error occurred during update	Continue to use older version of software. Contact TeeJet Customer Service or your local dealer.
5. Software Update button is not available	Invalid update file has been selected	Verify update file is a valid .bin file.
6. Device automatically connects to Mobile Interface	Auto-Join options is active	Turn off Auto-Join option in the device's Wi-Fi settings

See "Appendix A – Module & Driver LED Information" on page 18 for information on module and driver LED indicators.

EcoStop

APPENDIX A – MODULE & 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.
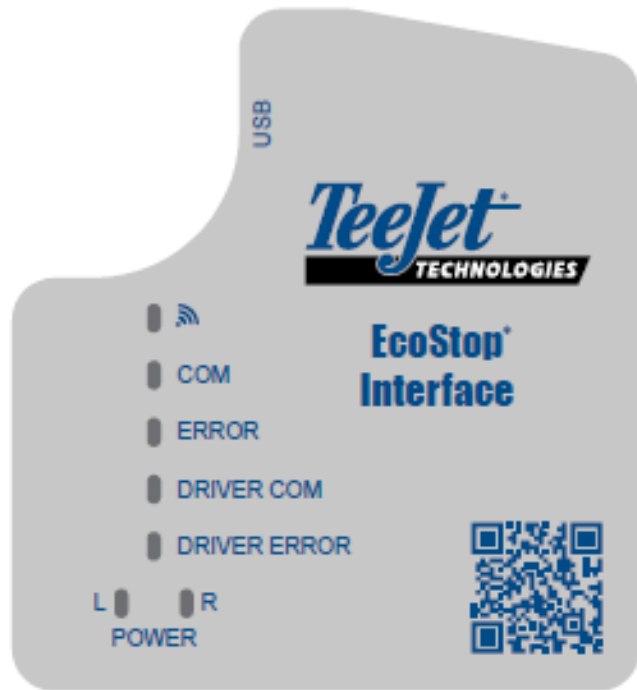
LED: DRIVER ERROR

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.
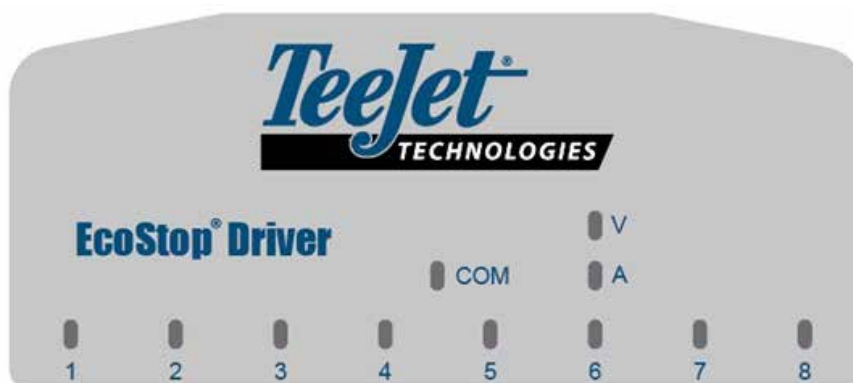
LED: POWER

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.

ECOSTOP
U S E R   G U I D E

Get started with these steps:

1. Connect hardware.

2. Make Wi-Fi connection to the EcoStop Interface Module.

3. Start EcoStop Mobile Interface.

4. Configure ⚙ implement settings.

5. Use the Work screen 🔧 to control application.

6. Enjoy on/off spray nozzle control of up to 160 nozzles.

7. Exit ✖ EcoStop Mobile Interface.

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http://ecostop.info

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