845-AB SPRAYER

USER MANUAL

TeeJet® TECHNOLOGIES

A Subsidiary of Spraying Systems Co.®

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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 equpment.
- 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 recognise 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 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.

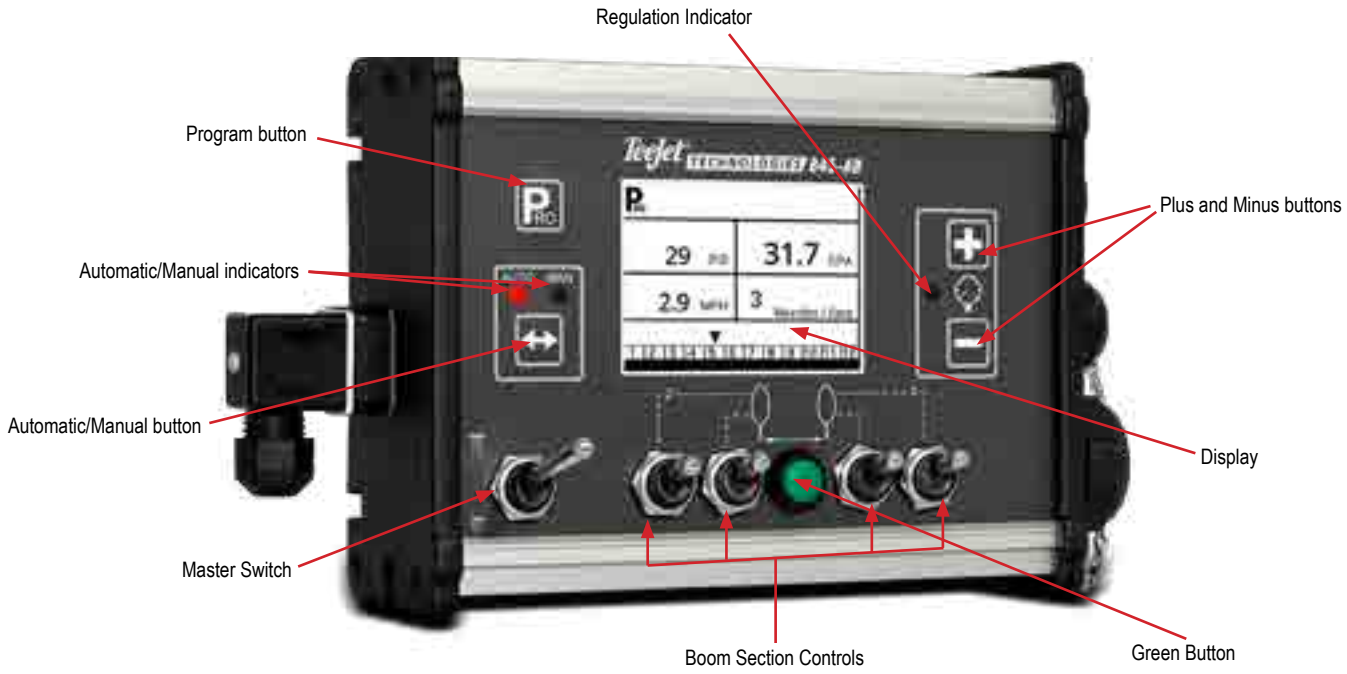
NOTE: RECOMMENDED REPLACEMENT PARTS

- 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.

CHAPTER 1 – INTRODUCTION

Make sure that all hardware components are properly installed and tested. Before starting the programming process, confirm that the console and all sensors are working properly.

IMPORTANT! Before beginning, review the following Program Guidelines that control the programming process



POWER

Power on the Console

To power on the console:

1. Press and release the PROGRAM button.

The console will initially display the software version at the top of the screen and the serial number of the console at the bottom of the screen.

After approximately 3 seconds, the console will enter the work screen.

NOTE: Keeping the PROGRAM button pressed will keep the start screen visible until released.

Power Off the Console

To power off the console:

1. While pressing and holding the MINUS button, press and release the PROGRAM button.
2. Release the MINUS button.

The console will save new information (area and volume counters) to memory before it powers down.

Pressing any key during the power off count down will cancel the shut off function.

Automatic Shutdown

With the Master Switch in the “OFF” position, the console will automatically shut down after 10 minutes of no inputs (or at the time specified in the Auto Power Down setting in the OEM Setup Mode).

PROGRAM MENU GUIDELINES

Enter the Setup Modes

For either of the two setup modes, the Master boom switch must be off.

System Program Menu

Press and hold the PROGRAM button until the Program System Menu screen appears (approximately 3 seconds). See Chapter 3 for additional details.

User Program Menu

Press and release the PROGRAM button once so the User System Menu screen appears. Press and release the PROGRAM button again within 3 seconds to enter the setting options. See Chapter 4 for additional details.

Advance to the Next Option

Press the PROGRAM button to advance the system to the next program step. After the final setup option is complete, the console will return to the initial setup option.

Edit a Setup Option

Press the PLUS button to increase the value or go to the next option on the list.

Press the MINUS button to decrease the value or go to the previous option on the list.

For some program options, press and hold the PLUS button or MINUS button to quickly change the values.

Press and release the PLUS button and MINUS button simultaneously to reset the value to "0".

For some program options, press and hold the PLUS button and MINUS button simultaneously to enter Automatic Calibration mode.

Exit the System Setup Mode

Press and hold the PROGRAM button for 3 seconds.

The inputs are stored, and the console will exit the setup mode.

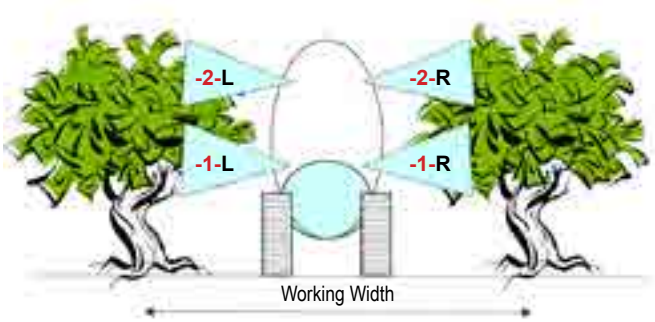
APPLICATION MODE

The 845-AB gives the possibility of working in two different ways to fit the application. Therefore, the console should be set up and consequent programming and working features will be dependant of the chosen mode.

Airblast mode

This mode is designed to work with Airblast sprayers, mostly spraying on two sides (left and right) with the possibility to switch on or off sections in the height. The working width is defined by the distance between two rows of trees. This mode is called AB (airblast).

Figure 1-1: Airblast (AB) principle

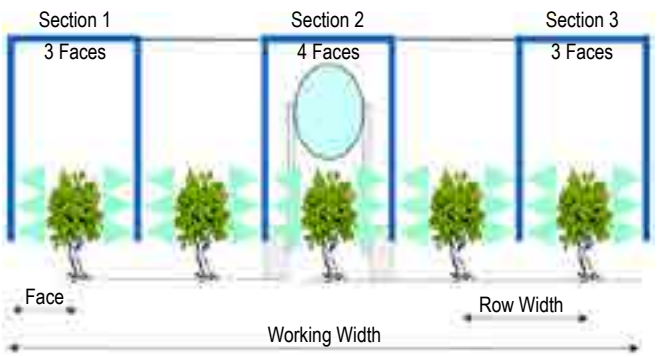


High Clearance / Vineyard Mode

This mode is designed to work with vineyard sprayers that are spraying horizontally. Several rows are covered and sections can be switched on or off to adapt the working width. Each section covers a number of faces. The working width is defined by the number of faces and the row width.

One or more Tips can be spraying each face. If all Tips spraying on a face are not equal, they should be considered as a unique Tip and the total flow has to be set up in the configuration menu. But all faces have to be sprayed equally. This mode is called HC (High Clearance / Vineyard).

Figure 1-2: High Clearance / Vineyard (HC) principle



CHAPTER 2 – INSTALLATION

MOUNTING THE TEEJET 845-AB CONSOLE

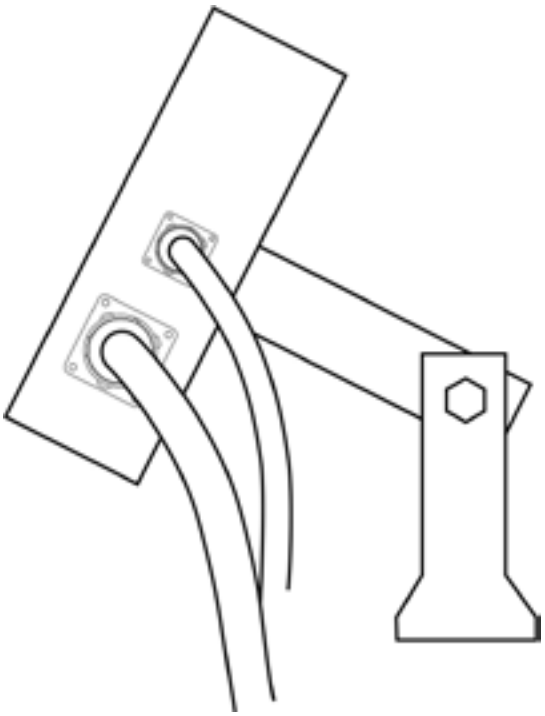
Console Step 1 - Location

Determine the best location for the control console in the cab or operator's compartment. Allow sufficient clearance, approximately 4 through 5"/10 through 12 cm to accommodate for the cable that will be connected to the right side of the console.

Console Step 2 - Mounting

Mount the console to a firm support within the cab area, and secure using the slots provided on the top, back, or bottom of the Console. Although two simple brackets are supplied with the unit, some additional bracketing may be necessary. The slots in the 845-AB will accept 1/4" / 6 mm bolts.

Figure 2-1: Brackets Provide Angle Adjustment



Console Step 3 - Power Connection

Locate the power cable that has a black connector on one end and two battery terminal rings on the other. Extend the battery terminal ring end of this cable from the cab to the battery.

NOTE: Make sure there are a total of 12 Volts delivered to the controller by connecting to the (+) terminal on one battery and the (-) terminal on the other battery. Reliable operation of the 845-AB Sprayer Control depends on a clean power supply. Ensure this by connecting the power cables directly to the battery and not to another power source.

Connect the battery terminal rings to the battery posts, making sure that the positive (red) and negative (black) wires correspond with the polarity of the battery terminals.

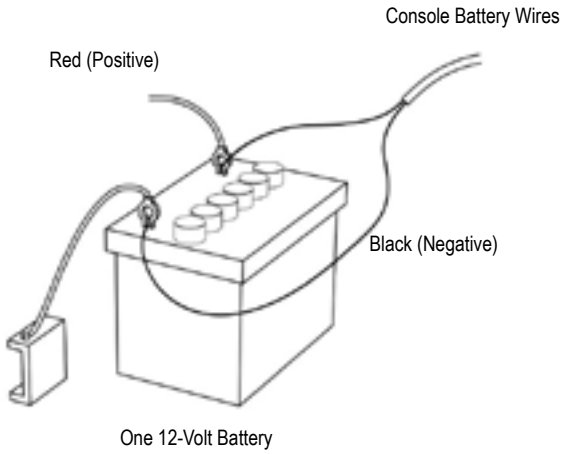
NOTE: The power cable is designed to provide the simple addition of a remote Master Switch in a convenient location (i.e. on the throttle, gear shift, or floor switch). To install a remote boom switch, simply install a switch to the blue wire in the power cable. The switch should be rated to handle the total current used by all boom section valves combined. If installed, the remote master switch will operate in series with the boom switches on the console.

Connect the battery cable to the power cable lead that extends from the main cable.

Test the installation by pressing the PROGRAM button once to turn the 845-AB console on. If the display shows information, you have wired the power correctly.

NOTE: The TeeJet 845-AB Sprayer Control has an Automatic Power Down feature. With the Master Switch in the "OFF" position, the 845-AB will automatically shut down after 10 minutes of no inputs or at the time specified in the Auto Power Down setting in the OEM Setup Mode. This prevents possible battery drainage. To turn the console "OFF" with the Master Switch located in the "OFF" position, press and hold the MINUS button while pressing the PROGRAM button once, and then releasing both buttons. The console will shut down providing no other buttons are pressed.

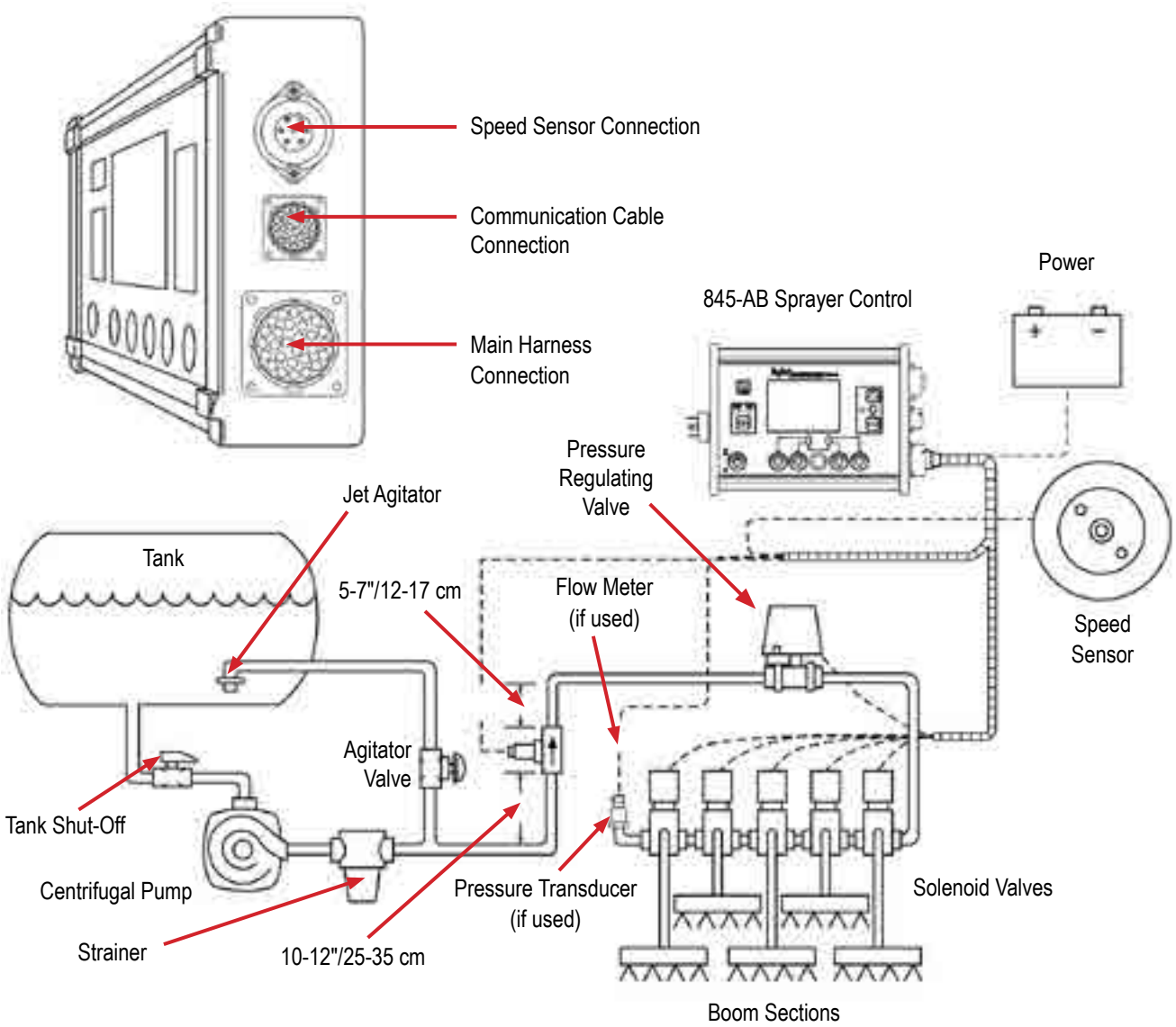
Figure 2-2: Power Connection



Console Step 4 - Connecting Component Cables

Once the console is installed, connecting it to the other components of the 845-AB system can begin. The standard kit contains a main cable that attaches to the master valve (optional), boom control valves, the pressure regulating valve, flow meter, and/or pressure sensor, and a proximity speed sensor or radar speed sensor. Lay out each of the valve and sensor leads before installing the sprayer components to be sure the cables are long enough in length from the sensor connections to the 845-AB console connection. If installation requires longer cables, several extension cables are available. If an exit hole has to be cut in the cab, be sure the edges are deburred and protected to prevent damage to the cables.

Figure 2-3: Wiring Diagram



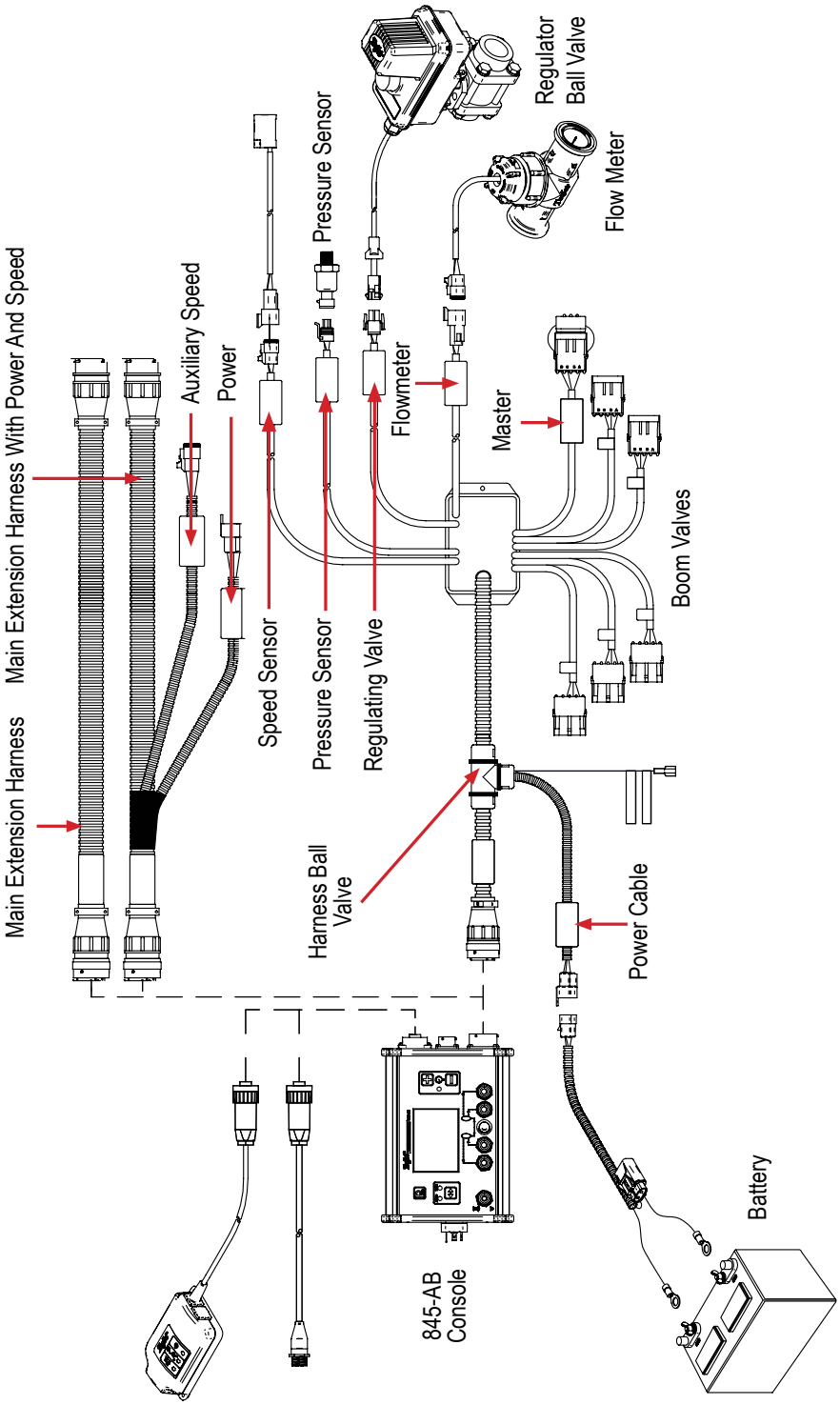
CONNECTING THE TEEJET 845-AB CONSOLE

Connect Step 1 - Wiring Layout

Determine the best cable routing to the sprayer control components on the sprayer. This may be along the flow line, main frame of the sprayer, or wherever the cables can be conveniently secured. Avoid any situation where the cables may lay in puddles or come in contact with extreme heat sources.

WARNING!: System Components should be mounted at least 3' / 1 m from areas of excessive vibration (i.e. engines) to avoid high frequency interference.

Figure 2-4: Wiring Layout



Connect Step 2 - Making The Connection

Now, extend the cable leads to the Flow meter or Pressure Sensor, and GNSS Speed Sensor to the furthest component. Select the appropriate lead and connect to this component. Run the cable to the other component, taking care to safely secure the cable along the route.

Refer to the wiring layout on page 5.

Repeat this procedure with the cable leads to the Pressure Regulating Valve and the Boom Control Valves.

Figure 2-5: Console Connector

Console Connector	Pin No.	Wire Color	Signal Name
	A	Blue	Boom Sensor 12v Out
	B	White	Boom 1
	C	Brown	Boom 2
	D	Green	Boom 3
	E	Yellow	Boom 4
	F	Gray	Boom 5
	R	White/Red	Flowmeter
	S	White	Pressure Sensor
	T	White/Green	Speed Sensor
	V	Brown	Sensor(+V) Out
	a	White	Regulation Valve (+)
	b	Brown	Regulation Valve (-)
	c	Blue	+12v Boom Master In
	d	Green	Ground
	e	Red	Console Power In

Figure 2-6: Speed Sensor Connector

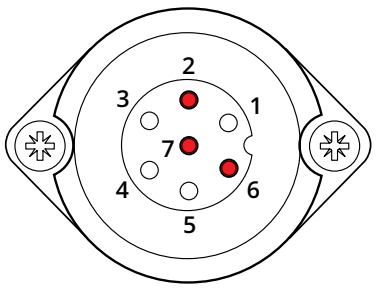
Speed Sensor Connector	Pin No.	Signal Name
	2	Speed
	6	+12v
	7	Ground

Figure 2-7: Communication Cable Connector

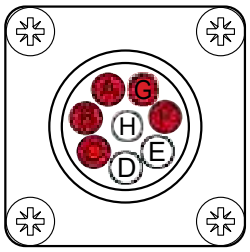
Communication Cable Connector	Pin No.	Signal Name
	A	Tx
	B	Rx
	C	Ground
	F	Ground Out
	G	Power Out (Sensors)

Figure 2-8: Power Connector

Power Connector	Pin No.	Wire Color	Signal Name
	1	Brown	+12 VDC 845-AB
	2	Blue	+12 VDC Master Switch
	3	Yellow/Green	Ground

Figure 2-9: Speed Sensor Connector

Speed Sensor Connector	Pin No.	Wire Color	Signal Name
	A	Brown	Power Out
	B	White	Speed Signal
	C	Green	Ground

Figure 2-10: Pressure Sensor Connector

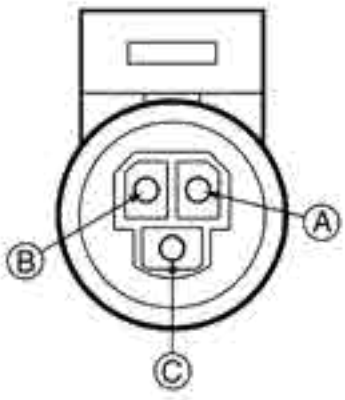
Pressure Sensor Connector	Pin No.	Wire Color	Signal Name
	A	White	Power Out
	B	Black	Pressure Signal
	C	N/C	

Figure 2-11: Flow Sensor Connector

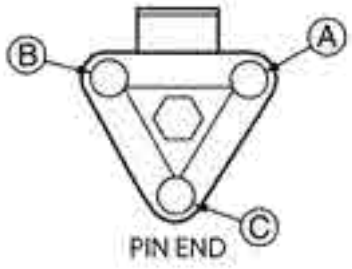
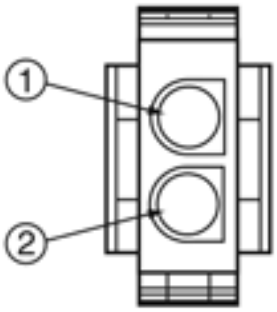
Flow Sensor Connector	Pin No.	Wire Color	Signal Name
	A	Brown	Power Out
	B	White	Flow Signal
	C	Green	Sensor Ground

Figure 2-12: Regulator Connector

Regulator Connector	Pin No.	Wire Color	Signal Name
	1	White	Regulation Valve (+) To Include Flow in ByPass Mode — +12v
	2	Black	Regulation Valve (-) To Include Flow in ByPass Mode — Ground

CHAPTER 3 – SYSTEM SETUP MODE

SYSTEM SETUP OVERVIEW

The following options are available in System Setup Mode. After the final setup option is complete, the console will return to the initial setup option.

- ▶ Units
  - ▶ Restore Defaults
- ▶ Speed Sensor Calibration
- ▶ Distance Counter
- ▼ Pressure Sensor Installed
  - ▶ Pressure Sensor, Low Pressure Calibration
  - ▶ Pressure Sensor, Maximum Rating
- ▶ Minimum Pressure
- ▼ Flow Meter Installed
  - ▶ Flow Meter Calibration
  - ▶ Flow Sensor Minimum Flow Capacity
- ▶ Regulation Mode
- ▶ Number of Sections
- ▼ Flow Presets Configuration
  - ▶ Select Preset Number
  - ▶ Select Reference Pressure
  - ▶ Select Reference Flow for Each Section
- ▶ Density
- ▶ Regulation Valve Type
- ▶ Regulation Speed Factor
- ▶ Section Valve Type
- ▶ Tank Size
- ▶ Minimum Tank Level
- ▼ Communication Mode
  - ▶ GNSS Speed
  - ▶ Variable Rate
- ▶ Simulated Ground Speed – Low Speed
- ▶ Simulated Ground Speed – High Speed
- ▶ Minimum Speed
- ▶ Faces per Section (HC Mode Only)

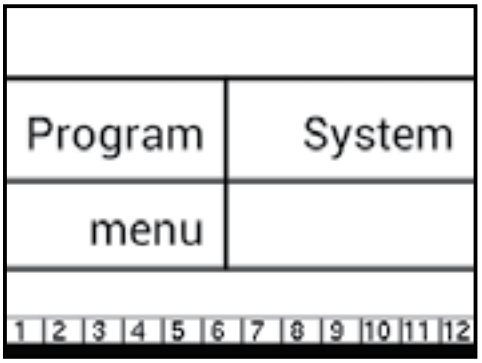
PROGRAM MENU GUIDELINES

Enter the System Setup Mode

The Master Switch must be off.

Press and hold the PROGRAM button until the Program System Menu screen appears (approximately 3 seconds).

Figure 3-1: System Program Menu



Advance to the Next Option

Press the PROGRAM button to advance the system to the next program step. After the final setup option is complete, the console will return to the initial setup option.

Edit a Setup Option

Press the PLUS button to increase the value or go to the next option on the list.

Press the MINUS button to decrease the value or go to the previous option on the list.

For some program options, press and hold the PLUS button or MINUS button to quickly change the values.

Press and release the PLUS button and MINUS button simultaneously to reset the value to “0”.

Press and hold the PLUS button and MINUS button simultaneously for 3 seconds to enter Automatic Calibration mode in some steps.

Exit the System Setup Mode

Press and hold the PROGRAM button for 3 seconds.

The inputs are stored, and the console will exit the setup mode.

Save All Setting Values

At any time in Setup Mode, press PROGRAM button and PLUS button simultaneously for 3 seconds to enter the Save All Setting Values option.

IMPORTANT: This is a safety backup function. Values are always stored when leaving the menu.

Use the PLUS or MINUS button to select YES or NO.

Press the PROGRAM button to advance to the next menu option.

Restore All Setting Values

At any time in Setup Mode, press PROGRAM button and MINUS buttons simultaneously for 3 seconds to enter the Restore All Setting Values option.

Use the PLUS or MINUS button to select YES or NO.

Press the PROGRAM button to advance to the next menu option.

SYSTEM SETUP DETAILS

Units

1.Select the units for operation. Options include:

Figure 3-2: Units

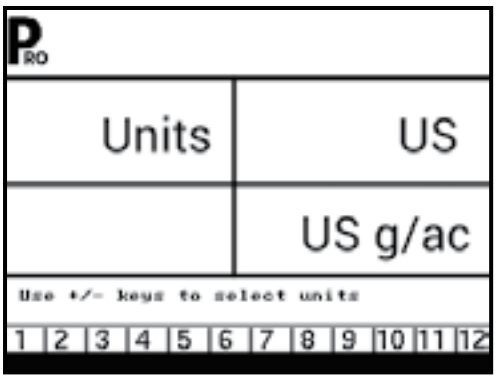


Table 3-1: Units of measurement

	US	SI
Speed	MPH (miles per hour)	KM/h (kilometers per hour)
Flow	GPM (gallons per minute)	L/min or LPM (liters per minute)
Area	Acres	Ha (hectares)
Pressure	PSI (pounds per square inch)	Bar
Volume	Gal (gallons)	Ltr (liters)
Speed impulses	p/300-ft (pulses per 300 feet)	p/100-m (pulses per 100 meters)
Tree spacing	Inch	cm (centimeters)
Dose rate	GPA (gallons per acre)	L/Ha or ltr/ha (liters per hectare)
Distance	feet	meter

Restore Defaults

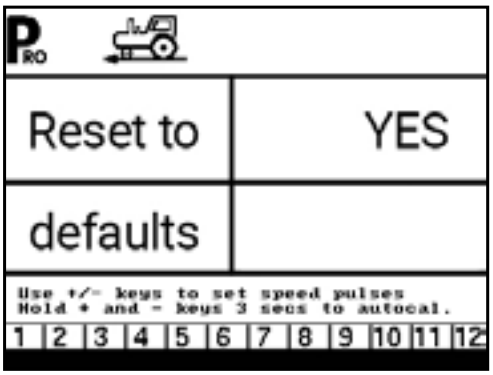
If the units of measurement are changed, default values for all settings must be restored.

1. Select from:

- Yes – units WILL be changed, and value WILL be reset. .
- No – units will NOT be changed, and value will NOT be reset.

NOTE: This has no effect on settings in the OEM menu.

Figure 3-3: Reset Defaults

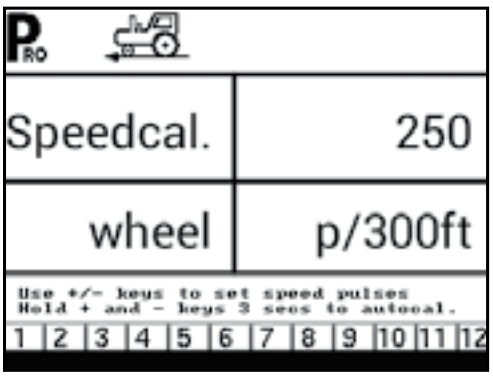


Speed Sensor Calibration

Set number of speed pulses per 100 meters / 300 feet.

1. Press the AUTO/MAN button to establish if a Wheel sensor or Radar sensor is being used.
2. If necessary, run the Automatic Calibration to determine the number of pulses.
3. Enter the number of pulses.

Figure 3-4: Speed Sensor Calibration



Automatic Calibration

It is best to perform the automatic speed calibration process at least twice and use the average of the speed calibration numbers. The automatic speed calibration process should take place with the sprayer tank 1/2 full.

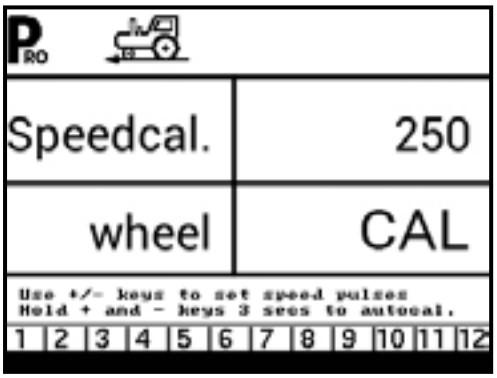
1. Mark off a distance of exactly 300 feet / 100 meters.*
2. Press and hold the PLUS and MINUS buttons simultaneously for 3 seconds to enter automatic calibration mode.

3. Start driving toward the start point of the 300 foot / 100 meter course.
4. As the starting point is crossed, press the PLUS button once to begin the calibration process. The 845-AB will count the pulses generated while the course is driven.
5. As the ending point is crossed, press the PLUS button once. The number displayed on the screen is the speed calibration number.
6. To accept the value, press the Program button. To edit the value, use the PLUS button or MINUS buttons.

The number of pulses is automatically stored as the new calibration.

*To confirm Automatic Speed Calibration distance, first complete the calibration procedure. Advance to the Distance Counter step. Drive the vehicle across the same 300 foot / 100 meters course, turning the Master Switch “ON” at the starting point and “OFF” at the finish point. The distance measured should be 300 feet / 100 meters (+/- 6 feet/+/- 1.8 meters).

Figure 3-5: Speed Sensor Automatic Calibration



NOTE: When the Automatic Calibration Mode is activated, no other functions are possible until the console receives pulses for calibration. To deactivate the Automatic Calibration Mode, press the PLUS button until a number is displayed.

Distance Counter

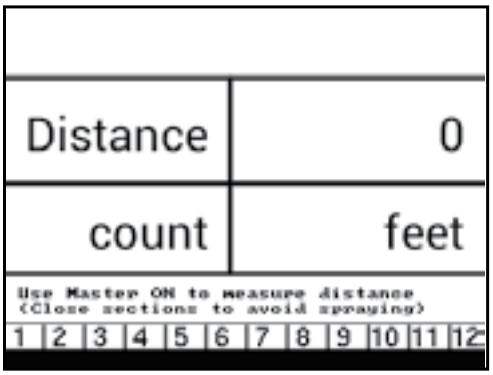
The Distance Counter step is not a calibration step. It is a help function that can be used to measure a distance such as to confirm Automatic Speed Calibration. No value can be entered here. This feature measures distance in feet/meters.

When using this function all section switches must be set to off to avoid spraying.

1. Turn Master Switch on to start distance counter.
2. Drive the desired distance.
3. Turn Master Switch off to stop distance counter.

To clear an existing distance value, press and hold the PLUS and MINUS buttons simultaneously for 3 seconds.

Figure 3-6: Distance Counter

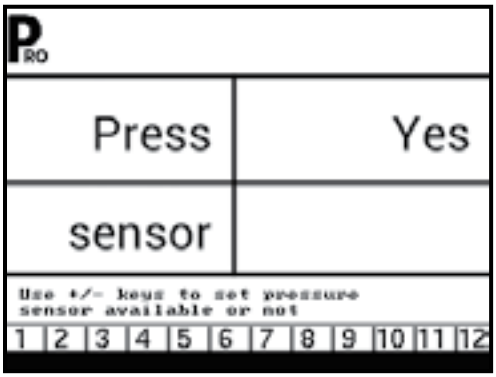


Pressure Sensor Installed

Select if a pressure sensor is installed.

If a flow sensor is not installed, this step is automatically set to “Yes” and cannot be changed.

Figure 3-7: Pressure Sensor Installed



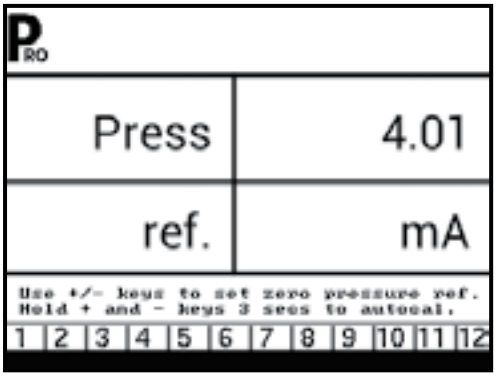
Zero Pressure Reference

This step is only available if “Pressure Sensor Installed” is set to “Yes”.

The Zero Pressure Reference is used to calibrate the zero pressure setting of the pressure sensor installed on the system. The pressure sensor used with the console is a current type sensor and uses a 4-20 mA reading. “4.0 mA” represents “zero” pressure.

1. If necessary, run the Automatic Calibration to determine the Zero Pressure Reference setting.
2. Enter the value for the Zero Pressure Reference setting.

Figure 3-8: Pressure Sensor, Zero Pressure



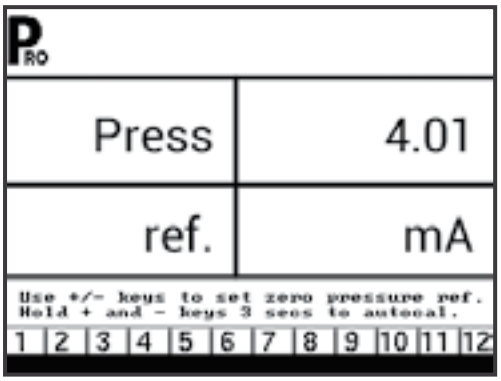
Automatic Calibration

Make sure that the sprayer pump is turned off and that there is absolutely no pressure in the system (release pressure held by boom control valves and Tip body check valves).

In some cases, it may be best to remove the sensor from the plumbing system to complete the calibration.

1. Press and hold the PLUS ⊞ and MINUS ⊟ buttons simultaneously for 3 seconds to start auto calibration mode. The lower left portion of the display will count from 1 through 10 during the calibration.
   Once the display finishes counting, it should display a number close to 4.0 (+/- 0.2).
2. To accept the value, press the Program Ⓟ button. To edit the value, use the PLUS ⊞ button or MINUS ⊟ buttons.

Figure 3-9: Zero Pressure Reference Automatic Calibration



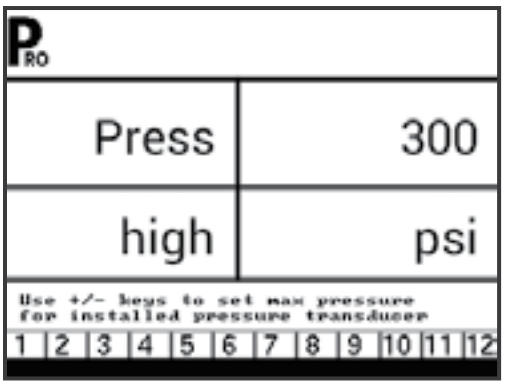
Maximum Pressure Rating

This step is only available if "Pressure Sensor Installed" is set to "Yes".

The Maximum Pressure Rating is used to establish the maximum rating of the pressure Sensor in the system. This number can be found stamped on the pressure sensor itself.

NOTES: Do not change the value to "0" even if there is no pressure sensor installed. The Maximum Pressure cannot be set lower than the Minimum Pressure. The Minimum Pressure defaults to 10 psi / 0.6 bar, below this value regulation is stopped.

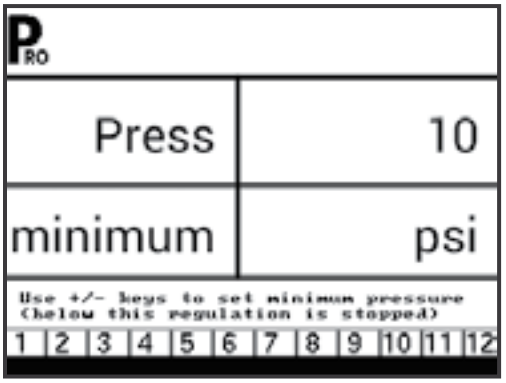
Figure 3-10: Maximum Pressure Rating



Minimum Pressure

Below the Minimum Pressure value, regulation is stopped.

Figure 3-11: Minimum Pressure

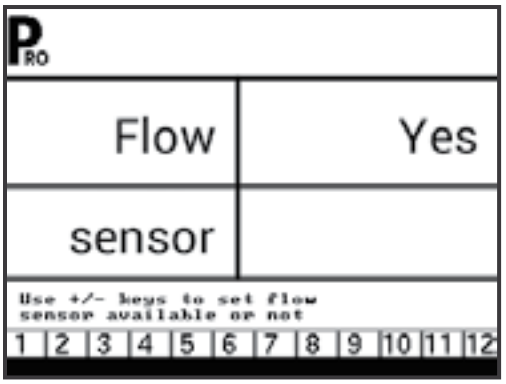


Flow Meter Installed

Select if a flow meter is installed.

If a pressure sensor is not installed this step is automatically set to "Yes" and cannot be changed.

Figure 3-12: Flow Meter Installed



Flow Meter Calibration

This step is only available if “Flow Meter Installed” is set to “Yes”. Flow Meter Calibration determines the flow meter pulses based on a known volume of fluid.

1. If necessary, run the Automatic Calibration to determine the number of pulses.

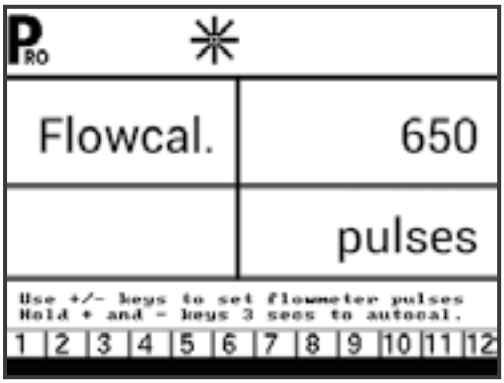
   NOTE: The automatic calibration procedure is recommended for maximum accuracy.

   Or note the flow meter calibration number found on the factory calibrated tag.

2. Enter the number of pulses.

Pressing the AUTO/MAN button will switch between normal value and decimal value (/10). Decimal values can be used with very low flow calibration values to improve regulation accuracy.

Figure 3-13: Flow Meter Automatic Calibration



Automatic Calibration

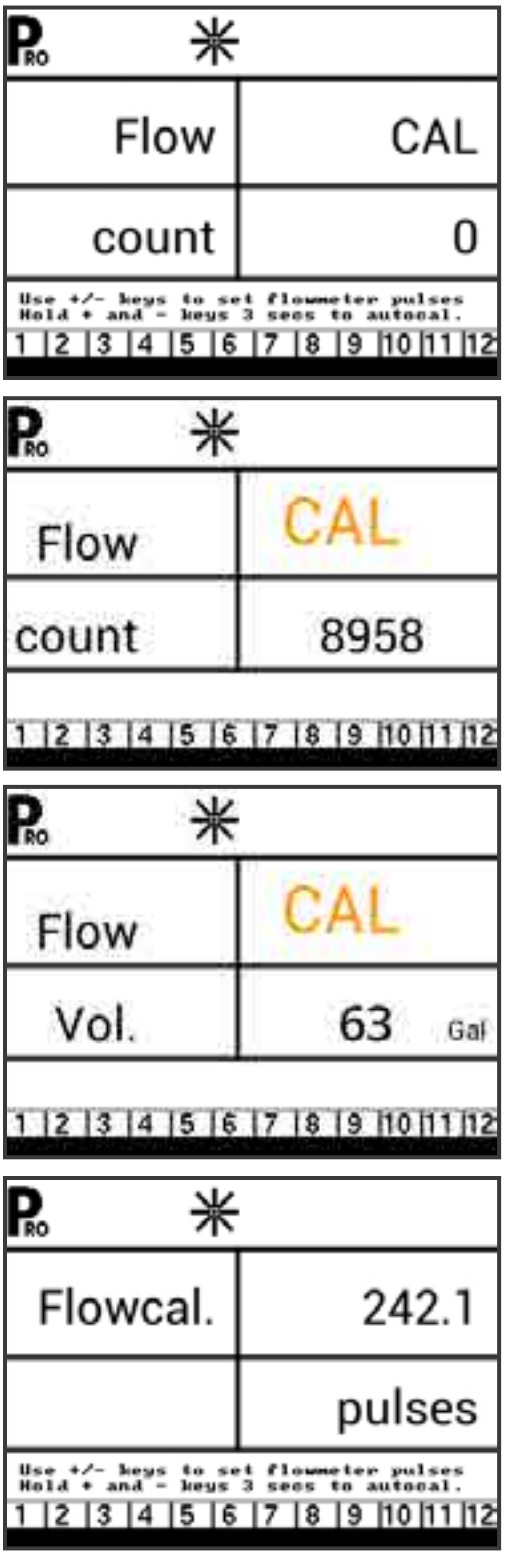
A volume of at least 50 gallons / 200 liters should be sprayed during the calibration. The more volume used for calibration, the more accurate the flow meter will be.

1. Press and hold the PLUS and MINUS buttons simultaneously for 3 seconds to start automatic calibration mode. This will clear the existing value and initiate the calibration procedure.
2. Engage the sprayer pump.
3. Turn the boom sections on and begin spraying a predetermined volume of fluid (i.e., 100 gallons / 300 liters).

   As the predetermined amount is sprayed, the console will count the pulses.
4. After the predetermined volume has been sprayed, turn the Master Switch off to stop counting pulses.
5. Press the Program button to advance to the next step.
6. Use the PLUS and MINUS buttons to enter the actual volume sprayed (gallons / liters).
7. Press the Program button to exit Automatic Calibration.
8. To accept the value, press the Program button.

To edit the value, use the PLUS or MINUS buttons.

Figure 3-14: Flow Meter Automatic Calibration

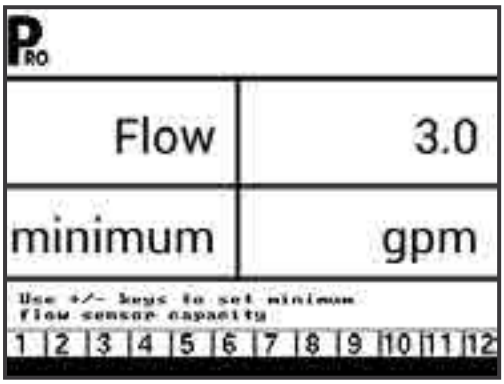


Flow Sensor Minimum Flow Capacity

This step is only available if "Flow Meter Installed" is set to "Yes" and the console is Programmed for use with a pressure sensor.

Set the minimum flow capacity for the installed flow sensor. Below the minimum flow capacity, regulation will switch to pressure mode. When flow capacity once again reaches an acceptable level for the flow meter to regulate, the console automatically switches back to flow based regulation.

Figure 3-15: Flow Sensor Minimum Flow Capacity



Minimum flow capacity can be located in the flow meter manufacturer's literature.

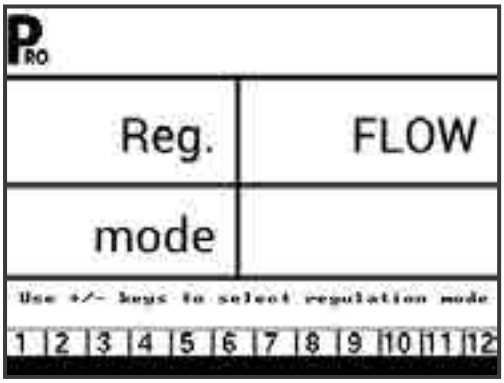
Regulation Mode

This step is only available when both a Flow Meter and a Pressure Sensor are installed.

Selecting a regulation mode will determine which sensor is used as the primary mode for regulation.

1. Select from:
   - ► Flow – the flow meter will be used to control flow and the pressure transducer will be used only to display the actual pressure.
   - ► Pressure – the pressure sensor will be used to control the flow and display the actual pressure.

Figure 3-16: Regulation Mode

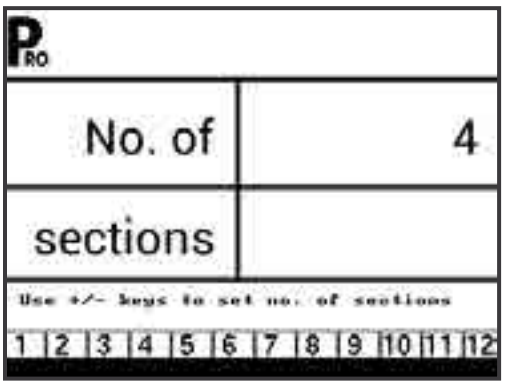


Number of Sections

This step is used to select the number of sections. The number of sections must match the physical number of sections on the sprayer.

NOTE: In HC mode, 1 to 13 sections can be selected. In AB mode, 2 to 10 can be selected in steps of 2.

Figure 3-17: Number of Sections



Flow Presets Configuration

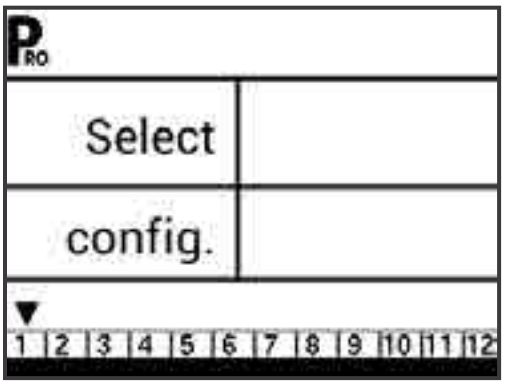
Configure reference pressure and reference flow for up to 12 Flow Presets.

1. Select Preset Number

The presets are presented by the numbers 1-12 at the bottom of the display. The arrow symbol indicates which preset is to be configured.

1. Use the PLUS ⊞ button and MINUS ⊟ button to select the Preset Number to be configured.
2. Press the AUTO/MAN ⇔ button to proceed to Reference Pressure for the selected Preset Number.

Figure 3-18: Flow Presets Number



2. Select Reference Pressure

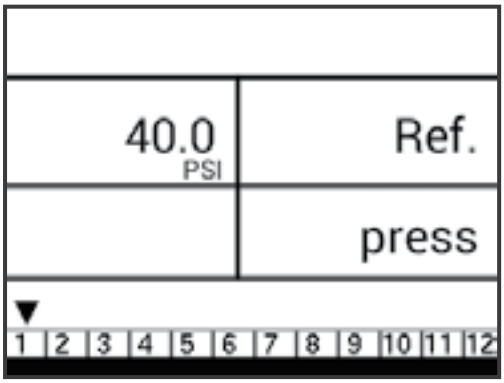
Establishes reference pressure for the selected Flow Preset.

1. Use the PLUS ⊞ button and MINUS ⊟ button to adjust the Reference Pressure.

2. Press the AUTO/MAN button to proceed to adjust the Reference Pressure

NOTE: The reference pressure can be any pressure at which the Tip flow is known (typically 40 psi / 2.0 bar).

Figure 3-19: Reference Pressure



3. Select Reference Flow for Each Section

Establishes reference flow for each section for the selected Flow Preset.

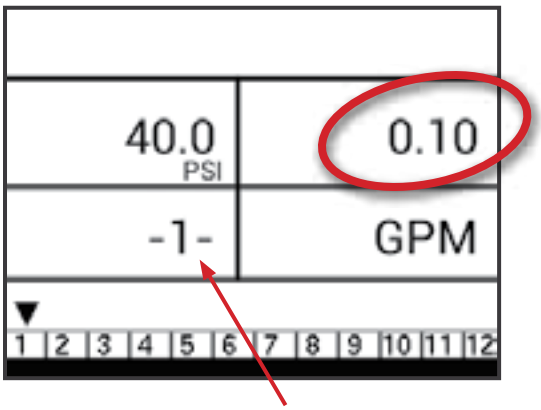
1. Use the PLUS button and MINUS button to adjust the Reference Flow.
2. Press the AUTO/MAN button to proceed to proceed to the next section.

When all sections have been configured, the AUTO/MAN button will return to select a new preset number.

NOTE: In AB mode, the reference flow is the total flow at reference pressure of all Tips on the given section number on one side of the sprayer. The console is programmed to treat the left and right boom sections as symmetrical; therefore, the console treats the flow rate for the lower left section (L1) identically to the flow rate of the lower right section (R1). The flow rate entered for section 2 will serve as reference for L2 and/or R2 and so on.

In HC mode there is only one reference flow setting per preset. The reference flow in this case represents the flow for one single Tip at the reference pressure. If several different Tips are mounted to spray on each face, they should be considered as ONE Tip and the total flow should be programmed. All faces on the sprayer must have the same Tip configuration!

Figure 3-20: Reference Flow per Section



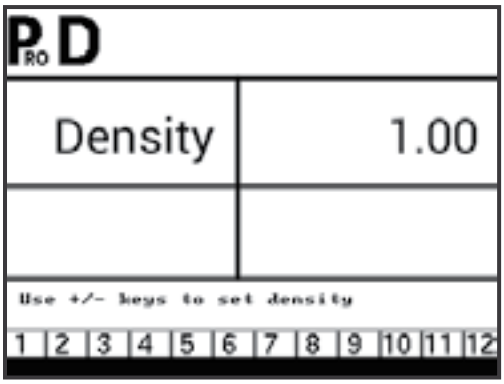
Current Section Number

Density Factor

Density Factor establishes the weight per volume setting based on the type of fertiliser being used. The fertiliser'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.). To accommodate for this, the console uses a density factor to compensate for the nature of the applied fertiliser.

Density factor is activated/deactivated in Application Setup Mode.

Figure 3-21: Density Factor

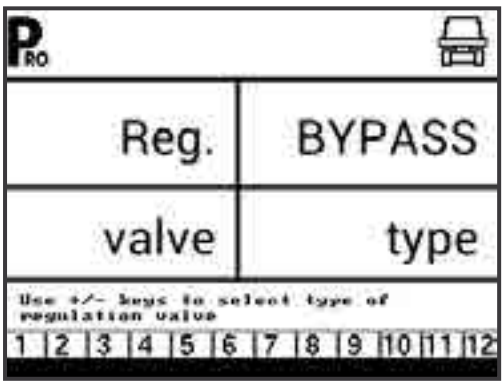


Regulation Valve Type

The Regulation Valve Type instructs the console where the regulating valve is plumbed into the system. Once configured correctly, this value should not change unless the regulating valve is physically moved to a new point in the plumbing.

1. Select from:
   - ► Throttle – the pressure regulating is plumbed in a supply line to the booms. With the controller in Manual Mode, the pressure regulating valve should open when the PLUS [+] button is pressed or close when the MINUS [-] button is pressed.
   - ► Bypass – the pressure regulating valve is plumbed in a bypass line. With the controller in Manual Mode, the pressure regulating valve should close when the PLUS [+] button is pressed or open when the MINUS [-] button is pressed.
   - ► PWM – a pulse width modulator is being used

Figure 3-22: Regulation Valve Type



Regulation Speed Factor

Operating conditions may necessitate a higher or lower response speed for the regulating valve. Any combination of numbers between 0.0 and 9.9 can be selected.

The first digit sets the speed for the coarse adjustment in relation to a large percentage outside of the target application rate.

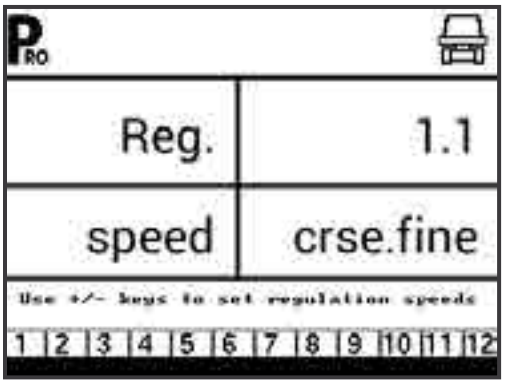
The second digit sets the speed for the fine tune adjustment in relation to a small percentage close to the target application rate.

If your system is plumbed in a bypass mode, the Regulation Speed Factor of 9.5 works very well in most applications.

If your system is plumbed in a throttling mode, start with a Regulation Speed Factor of 5.5 and adjust the number according to your application requirements. Low flow situations will require a slower response time.

NOTES: The Regulation Speed Factor can be adjusted to optimize system performance. If the valve searches for the programmed application rate by cycling the pressure up and down continuously, reduce the Fine Adjustment Factor until the searching is minimized or eliminated. A higher number will increase the valve response speed and increase the rate of adjustment.

Figure 3-23: Regulation Speed Factor

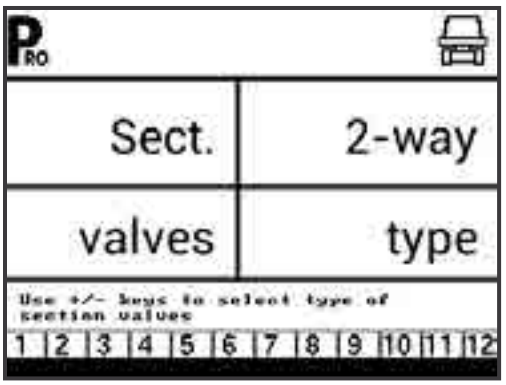


Section Valve Type

The Section Valve Type distinguishes the type of On/Off boom control valves installed on the machine. There are 2 types of valves that can be used:

1. Select from:
   - ► 2-way – control valve is simply an On/Off valve. Flow is either directed to the boom section(s) or it is blocked.
   - ► 3-way – control valve is known as a Bypass valve. Flow continuously passes through this valve. When the valve is activated (on), flow is directed to the boom section(s). When the valve is not activated (off), flow is directed through a bypass port back to the supply tank.

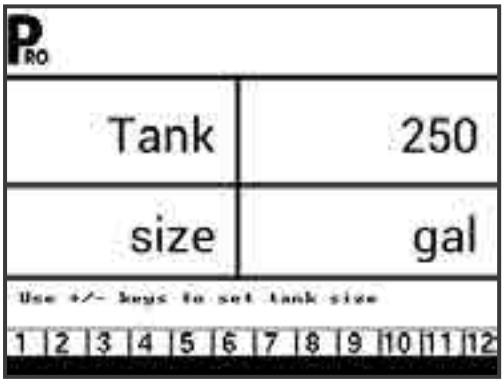
Figure 3-24: Section Valve Type



Tank Size

Sets the maximum tank size.

Figure 3-25: Tank Size

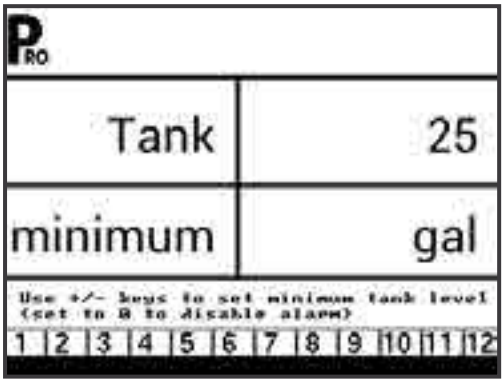


Minimum Tank Level

Sets the tank level at which an alarm will trigger.

Setting this value to 0 will disable the tank alarm.

Figure 3-26: Minimum Tank Level



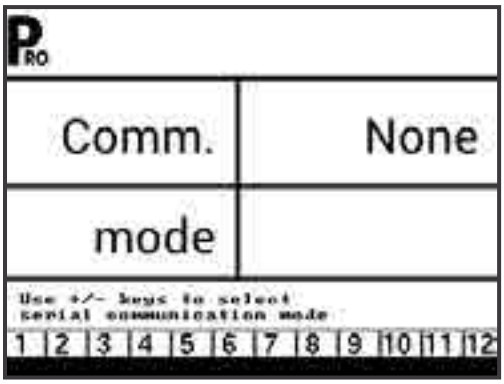
Communication Mode

The Communications step allows for the selection of the type of communications (if any) used.

Select from:

- None – no external communications
- GPS speed – global position satellite system capability
- MT-98 VR+speed – variable application rate communications
- TJ845-AB Var. Rate – variable application rate communications
- TEEJET NMEA log
- LOG special

Figure 3-27: Communications Mode

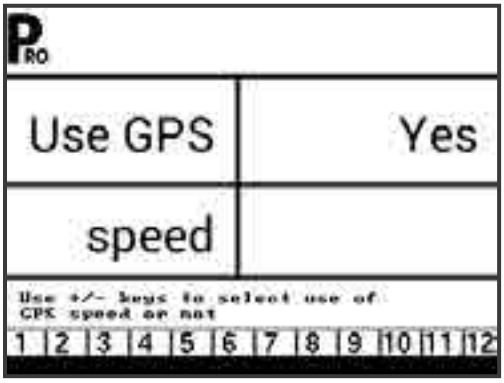


Use GNSS Speed

This setting is only available if communication mode is set to “GPS speed” or “MT-98 VR+speed”.

GNSS Speed allows the console to accept speed data from an external GNSS source. Select either “Yes” to use the external GNSS Speed input, or “No” to ignore external speed input.

Figure 3-28: Use GNSS Speed

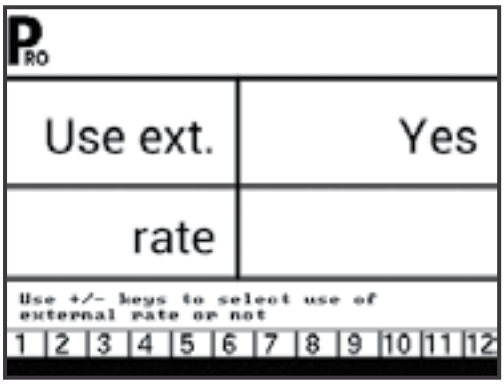


Use External Rate

This setting is only available if communication mode is set to “MT-98 VR+speed” or “TJ845-AB Var. Rate”.

Variable Rate is used to indicate whether local control rates are to be used or ignored. When set to “No”, the console will ignore the rate coming from the variable rate device and use its own preset rate. When set to “Yes”, the console will use the rate determined by the variable rate device, usually as determined from a prescription map.

Figure 3-29: Use External Rate



Simulated Ground Speed

Simulated ground speed allows the verification of console functions and the sprayer without actually moving the sprayer.

The console has a low and high simulated ground speed that allows for switching between the two to simulate a speed change. This will ensure that the console is regulating properly during sprayer checkout.

To activate the simulated speed, while on the work screen without the machine in motion and the Master Switch in the "ON" position:

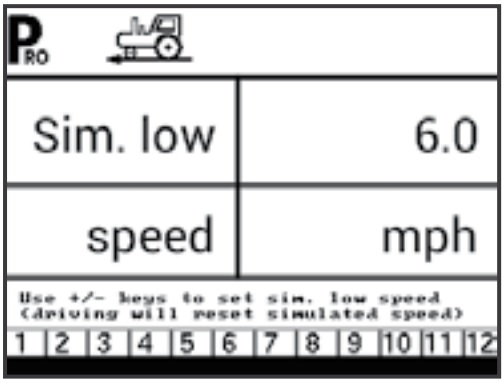
- While pressing and holding the Program button, press and release the MINUS button simultaneously for low simulated speed.
- While pressing and holding the Program button, press and release the PLUS button for high simulated speed.

NOTE: Once the sprayer begins moving and the console receives actual speed pulses, simulated ground speed is deactivated. If a Radar/GNSS Speed Sensor is being used, disconnect the Radar/GNSS from the main console. Due to the sensitivity of this speed sensor, any movement can disable simulated speed.

Low Speed

Set simulated low speed.

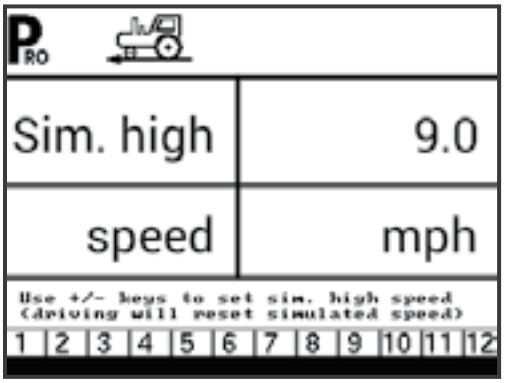
Figure 3-30: Simulated Ground Speed – Low Speed



High Speed

Set simulated high speed.

Figure 3-31: Simulated Ground Speed – High Speed



Minimum Speed

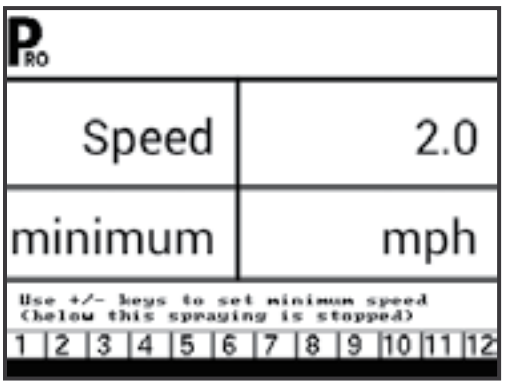
Set the minimum speed at which the console automatically shuts the boom sections off to eliminate an operator function when slowing to stop or turn around. There will be no spraying below this speed.

When the sprayer speed exceeds the established Automatic Master Off Speed, the boom sections turn back on.

Set this value to "0" to disable.

This feature is disabled when operating in Manual Mode.

Figure 3-32: Minimum Speed

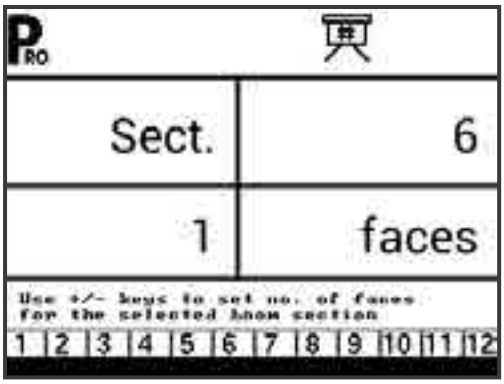


Faces per Section (HC Mode Only)

As HC mode calculates working width based on the number of faces sprayed by each section.

Set number of faces for each section. Each section programmed in the Number of Sections setting will have a separate setting to set the number of faces per section.

Figure 3-33: Faces per Section



OEM

The OEM menu is normally only used by the OEM manufacturer for setting up machine specific parameters. For more information on options and settings see 845-AB Sprayer OEM Setup Mode Guide (part number 98-01612) at the end of this document.

CHAPTER 4 – ROW WIDTH PRESETS

The 845-AB can be programmed with up to 6 preset row widths. This allows the operator to easily change from one row width to another during application.

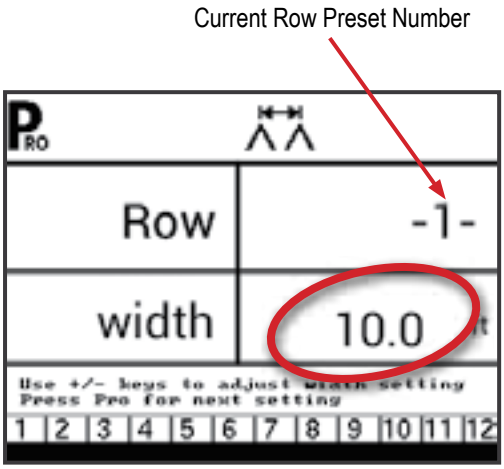
Configuring Row Width Presets

To enter row width presets mode, press and hold the GREEN button for 3 seconds.

Use the PLUS ⊕ and MINUS ⊖ buttons to adjust the row width.

Press the PROGRAM Ⓟ button to proceed to the next row.

Figure 4-1: Entering row width presets



If all six presets are not required, enter values only for the necessary number of presets. All others should be set to “0”. Values set to “0” will not be available for operation selection.

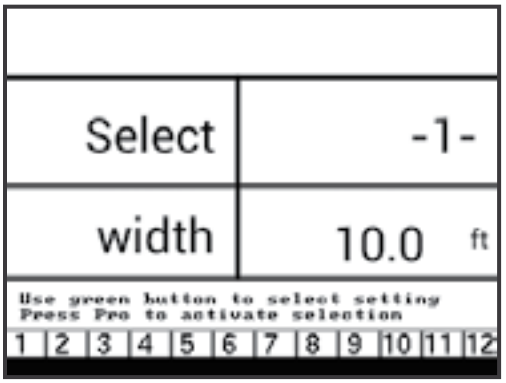
Selecting Row Width Preset

Once the row widths are programmed, select the row width to be used.

Press the GREEN button during Operations mode with the Master Switch in the OFF position to cycle through the available Row Width Presets.

Press the PROGRAM Ⓟ button to select the Row Width Preset and return to Operation mode.

Figure 4-2: Row width selection



CHAPTER 5 – APPLICATION SETUP MODE

APPLICATION SETUP OVERVIEW

Depending on the machine type (AB or HC), the unit will switch to one of two different User Menu screens.

The following options are available in Application Setup Mode. After the final setup option is complete, the console will return to the initial setup option.

In AB Mode

- ▶ Flow Preset Selection
- ▶ Target Application Rate
- ▶ Pressure Value
- ▶ Speed

In HC Mode

- ▶ Flow Preset Selection
- ▶ Nozzles per Face
- ▶ Target Application Rate
- ▶ Pressure Value
- ▶ Speed

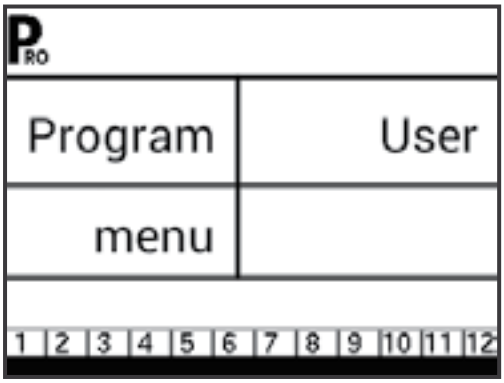
PROGRAMME MENU GUIDELINES

Enter the Application Setup Mode

The Master Switch must be off.

Press and release the PROGRAMME button once so the Programme User Menu screen appears. Press and release the PROGRAMME button again within 3 seconds to enter the setting options.

Figure 5-1: User Programme Menu



Advance to the Next Option

Press the PROGRAMME button to advance the system to the next Programme step. After the final setup option is complete, the console return to the initial setup option.

Edit a Setup Option

Press the PLUS button to increase the value or go to the next option on the list.

Press the MINUS button to decrease the value or go to the previous option on the list.

Press and hold the PLUS button or MINUS button to quickly change the values.

Press and hold the PLUS button and MINUS button simultaneously to reset the value to “0”.

Exit the System Setup Mode

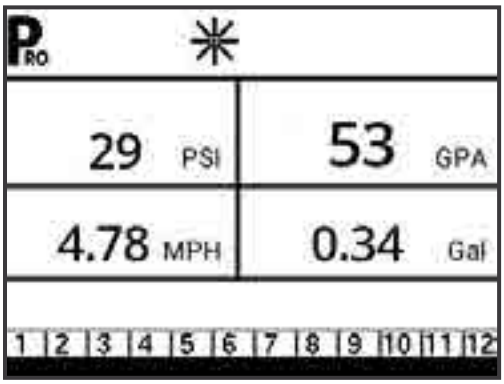
Press and hold the PROGRAMME button for 3 seconds.

The inputs are stored, and the console will exit the setup mode.

Activate Density Factor

At any time in Application Setup Mode, pressing the AUTO/MAN button will toggle the density symbol (‘D’) on or off. When the density symbol is on, the density value (set in System Setup mode) will be used in the regulation algorithms. If the density symbol is off, the density factor will not be used.

Figure 5-2: Density Active

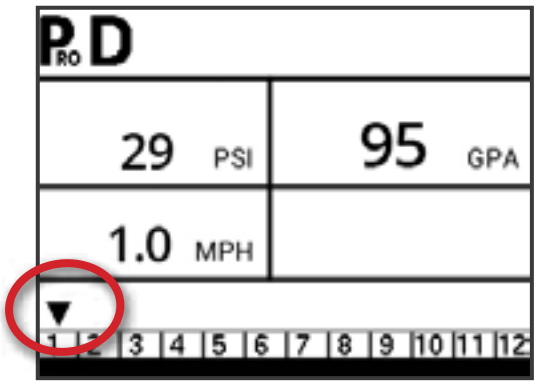


APPLICATION SETUP DETAILS

Flow Preset Selection

Sets which flow preset will be used.

Figure 5-3: Flow Preset

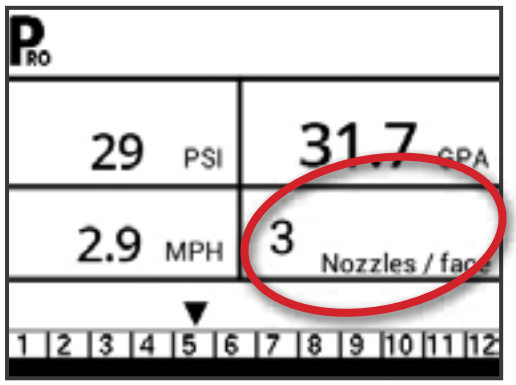


Tips per Face

This setting is not available in AB Mode. The field will be blank.

Set number of nozzles per face.

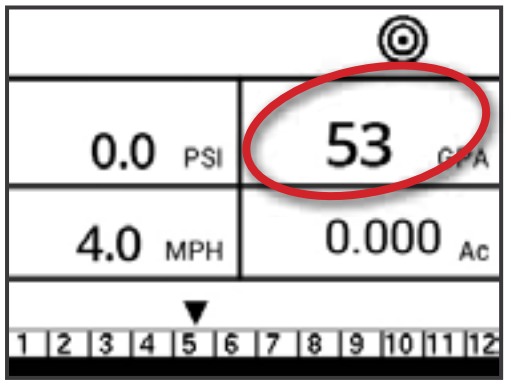
Figure 5-4: Tips per Face



Target Application Rate

Set target application rate.

Figure 5-5: Target Application Rate

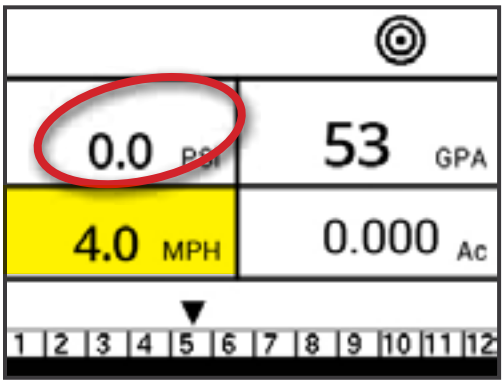


Known Pressure Value

The console will calculate the speed for the selected pressure, nozzle type and target rate.

- If the indicated speed is too high, a set of smaller nozzles is required.
- If the indicated speed is too low, a set of larger nozzles is required.

Figure 5-6: Known Pressure Value



Known Speed Calculation

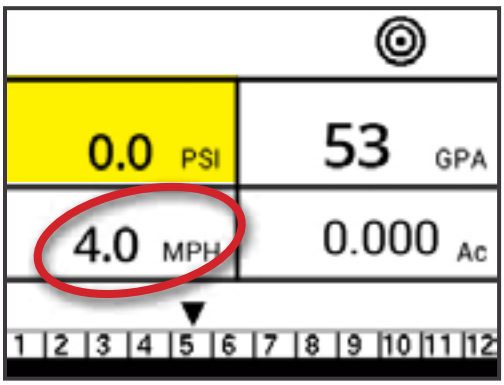
The console will calculate what the pressure must be to maintain the target application rate at the entered speed.

- If the pressure is too high, a set of larger nozzles or a slower speed is necessary.
- If the pressure is too low, a set of smaller nozzles or a faster speed is necessary.

Continue trying different speed, pressure, and nozzle combinations until the desired combination is found.

NOTE: Known Pressure and Known Speed values are calculators and aids only for customers that have no software connection to the application.

Figure 5-7: Known Speed Calculation



CHAPTER 6 – OPERATING INSTRUCTIONS

WORK SCREEN

The work screen is comprised of 6 information areas including:

A. Information Bar - Displays icons to show current modes

B. Program Mode

C. Density Factor active

D. Simulated Speed active

E. Flow Meter

F. Row Width (Setup mode)

G. Section Number (Setup mode)

H. Target Application Rate active

I. Valve (Setup mode)

J. Pressure - Displays current pressure

K. Application Rate

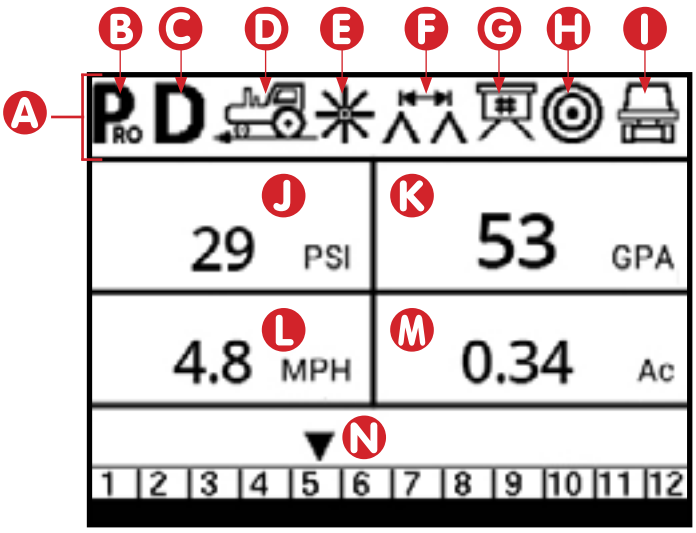
L. Speed - displays the current speed, when GNSS speed is available, "GPS" will be displayed

M. Applied Area / Total Volume Applied - display switches between total applied area and total applied volume

NOTE: Holding the PROGRAM [P] button while the Master Switch is on will change the area, marked M, to flow per minute.

N. Row Width Preset - displays a black arrow over the current Row Width Preset

Figure 6-1: Work Screen



BEFORE YOU GET STARTED

Sprayer Check

Before spraying, check all connections related to the Sprayer Control assembly.

WARNING: Whenever working around a sprayer or farm chemicals, be sure to wear protective clothing and eye wear.

Partially fill the sprayer tank with water to flush the system and to make a visual check of the spray tips to be sure all tips are delivering a good spray pattern.

Follow these steps, in sequence, being sure the Master Switch is in its "OFF" position:

1. Be sure the tank shut-off valve is open.
2. Start the engine, engage pump, and set the RPM to that which will be used when spraying.
3. Switch the console on by pressing the PROGRAM button on the display panel.
4. Ensure that the spray nozzles being used match those selected on the display.
5. Turn "ON" the toggle switches for each of the spray booms on the sprayer.
6. Press the AUTO/MANUAL button so that the red LED light indicates "MAN" mode.
7. Now, toggle the Master Switch to "ON."
8. Adjust the pressure with the PLUS button and/or MINUS button.
9. While spraying, adjust the pressure with the button to the system's minimum point.
10. Now press the PLUS button for three (3) seconds. This will move the regulating valve to its middle position.
11. Manually adjust the system pressure using a throttle valve in the supply line or a manual shutoff valve on a bypass line. Adjust the system pressure so that it is close to what the operating pressure will be for the application.
12. This ensures a maximum range of automatic adjustment while spraying in AUTO mode. At this point, the sprayer will be activated and spray Nozzle performance can be visually checked. The pressure adjust buttons can be used to raise or lower the spraying pressure. To stop spraying, toggle the Master Switch to "OFF".

The previous steps provide a quick way to check out the sprayer and consoleized control system.

NOTE: It is recommended to calibrate the sprayer to prepare the unit for operation, and to diagnose spray Nozzle wear. Worn nozzles can contribute to costly chemical waste, and inaccurate spraying regardless of the use of a sprayer control. Calibration is important and necessary to obtain the benefits associated with a consoleized sprayer control.

THE SPRAYING OPERATION

1. Switch the console on by pressing the PROGRAM button on the display panel.
2. Toggle the boom switches to their “ON” position, for each of the booms on your sprayer.
   - Take note of the “numbered” booms on each side of the sprayer, so that the appropriate boom can be toggled “OFF” as necessary.
3. The AUTO/MANUAL button should be switched to “AUTO.”
   - In the AUTO mode, when the Master Switch is “OFF”, the target application rate as well as the target symbol will be displayed in the console display. When the Master Switch is “ON”, the actual rate will be displayed and the target symbol will no longer appear.

Upon entering the field at the point where spraying will begin, turn the Master Switch to “ON” position. This will activate the spraying operation. Maintain the usual vehicle speed for spraying. Moderate changes in vehicle speed will not affect the application rate, because such changes are compensated by automatic pressure increases or decreases. If for any reason there is a need to stop, turn the Master Switch to “OFF.”

Alarm warnings can occur momentarily while the pressure regulating valve is searching for a new setting after the closing of a boom section or other change in normal operation. However, if the alarm stays on for a longer time, the valve may have reached its limit and the system will be unable to regulate flow beyond the limit.

BOOM SECTIONS & SWITCHES

The console operates with four (4) section switches and one (1) Master switch. Each section switch is associated with the same number of sections on the boom.

► Switches – control individual boom sections

◄On – Flip the switch up

◄Off – Flip the switch down

► Master switch – opens/closes the main product valves and enables/disables power to individual boom section on/off switches

Figure 6-2: Master Switch, 5 Section Switches

OPERATION FEATURES

Tank Level

The tank level menu is used to show and/or set the actual content level in the tank. This level will decrease by the amount being sprayed. If the minimum tank level has been set to a value greater than zero and the actual level becomes less than the minimum level, a tank alarm will be triggered. Setting minimum tank level to zero will disable tank alarm function.

View Tank Level

The current tank level will be displayed.

1. Start from the work screen with the Master Switch “OFF”.
2. Press and release the PLUS ⊞ button and MINUS ⊟ button simultaneously.
3. Press the PROGRAM Ⓟ button to exit to normal work screen.

Adjust Tank Level

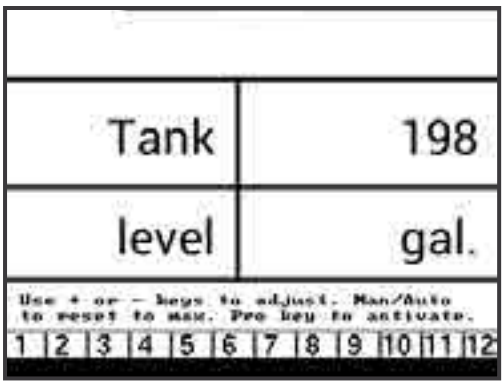
Maximum Tank Size is set in System Setup menu, see Chapter 3 for information.

NOTE: Tank level cannot be set higher than the maximum level.

1. Start from the work screen with the Master Switch “OFF”.
2. Use the PLUS ⊞ and MINUS ⊟ buttons.

   Or Press the MAN/AUTO ⇔ button to reset tank level to maximum.
3. Press the PROGRAM Ⓟ button to confirm the selection and exit to normal work screen.

Figure 6-3: Tank Level



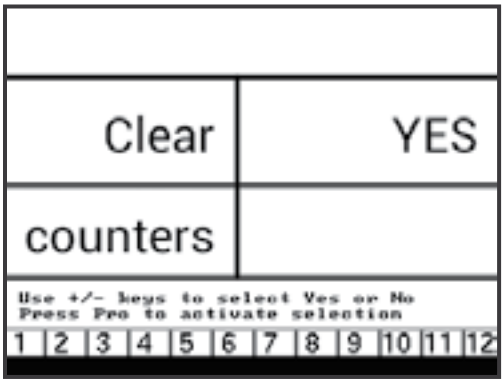
Clear Counters

The Clear counters menu is used to reset the total area, total volume and total distance counters to zero.

To clear the counters:

1. Start from the work screen with the Master Switch “OFF”.
2. Press and hold the MAN/AUTO ⇔ button for 3 seconds.
3. Use the PLUS ⊞ or MINUS ⊟ buttons to select “YES”.
4. Press the PROGRAM Ⓟ button to confirm the selection and exit to normal work screen.

Figure 6-4: Clear Counters



Simulated Speed

Simulated ground speed allows the verification of console functions and the sprayer without actually moving the sprayer.

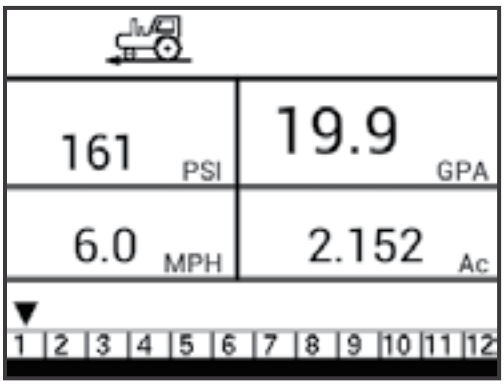
The console has a low and high simulated ground speed that allows for switching between the two to simulate a speed change. This will ensure that the console is regulating properly during sprayer checkout.

Activate the Simulated Speed

While on the work screen without the machine in motion and the Master Switch in the "On" position:

- Activate Low Simulated Speed – While pressing and holding the PROGRAM Ⓟ button, press and release the MINUS ⊟ button. The controller will start regulation using this speed.
- Activate High Simulated Speed – While pressing and holding the PROGRAM Ⓟ button, press and release the PLUS ⊞ button. The controller will start regulation using this speed.

Figure 6-5: Simulated Speed



Deactivate Simulated Speed

Once the sprayer begins moving and the console receives actual speed pulses, simulated ground speed is deactivated. If a Radar/GNSS Speed Sensor is being used, disconnect the Radar/GNSS from the main console. Due to the sensitivity of this speed sensor, any movement can disable simulated speed.

Simulated speed will also be deactivated if the console is powered off.

Manual/Automatic Regulation Mode

In manual mode, automatic rate regulation is stopped completely. Pressing the PLUS ⊞ button simply moves the regulating valve to increase the flow (or increase the PWM duty cycle) as long as the button is pressed. Pressing the MINUS ⊟ button gives the opposite action. The valve (or the PWM duty cycle) stays in the position it had, when the PLUS ⊞ or MINUS ⊟ button was released. The application rate value shown on the screen is the actual rate for the given speed. Since automatic regulation is stopped, it will appear that the rate value changes when the speed is changed.

NOTE: Access to manual mode may be blocked completely in OEM menu.

1. Use the AUTO/MAN ⇔ button to switch between manual and automatic regulation modes.

Figure 6-6: Manual Regulation Mode

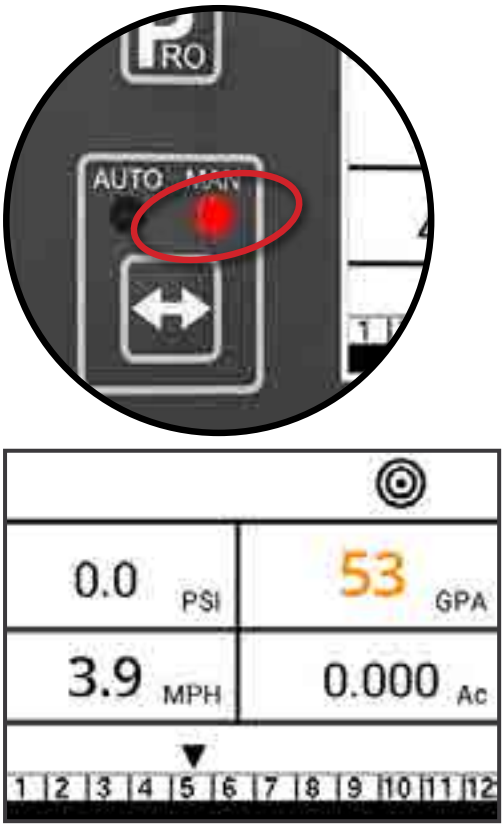


Figure 6-7: Automatic Regulation Mode

Boost Function

The boost function is used to increase or decrease the application rate by increments of 10%. When the rate has been changed via the boost function, regulation is still fully functional. The rate is still regulated but target rate is simply increased or decreased by the percentage selected.

NOTE: Access to boost function may be blocked completely in OEM menu!

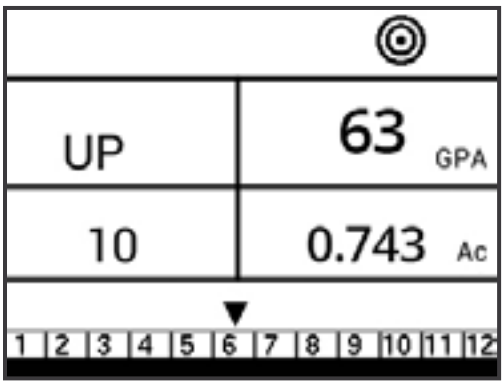
Boost function can be activated at any time from normal work screen with the Master Switch "ON".

Increase/Decrease Target Application Rate

1. Press the PLUS ⊞ button or MINUS ⊟ button.
2. Within 3 seconds (while the boost activation period is active), use the PLUS ⊞ button or MINUS ⊟ button, to increase or decrease the rate in steps of 10%.

After the activation period, the display will revert to normal, but if the rate has been changed, the target symbol will stay visible and flashing.

Figure 6-8: Boost Activation Period Active



Reset Target Application Rate

Reset the target value to the set rate. See Target Application Rate in Chapter 4 for details on the set rate.

1. Press the PLUS ⊞ and MINUS ⊟ buttons simultaneously.

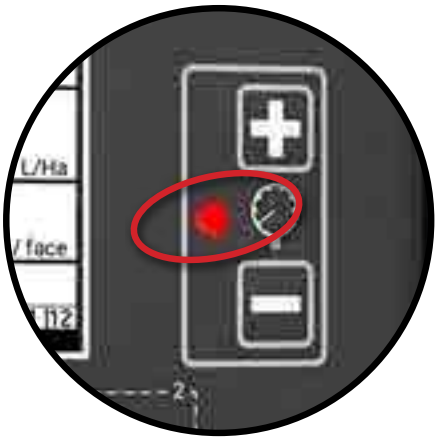
Regulation Indicator

The LED indicator shows when the console is regulating upwards or downwards (i.e. moving the regulating valve or changing the PWM). The intensity of the LED light is proportional to the speed of change.

Examples: In bypass mode, the LED will be green when regulating upwards or orange when regulating downwards.

In throttle mode, the LED will be orange when regulating upwards or green when regulating downwards.

Figure 6-9: Regulator Indicator



Automatic Power Down

The console is designed to power itself off after 10 minutes of inactivity (or at the time specified in the Automatic Power Down setting in the OEM Setup Mode). This feature keeps the console from draining the battery on the sprayer, if the operator inadvertently leaves the console powered on for an extended period.

Automatic Power Down only occurs when the Master Switch is in the “Off” position.

To manually power down the console, refer to “Power” in Chapter 1.

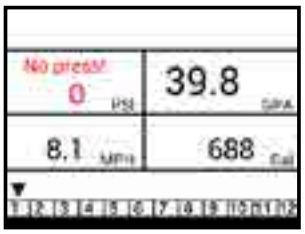
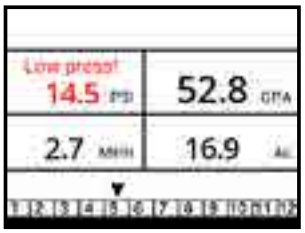
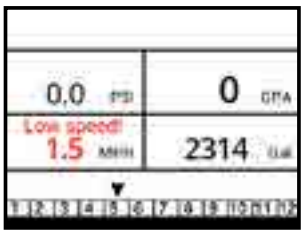
NOTE: The Automatic Power Down feature is not available when the console is in any program mode.

Smart Sensing

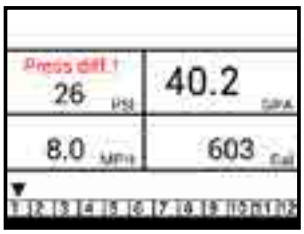
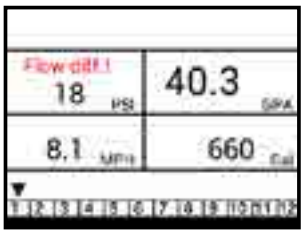
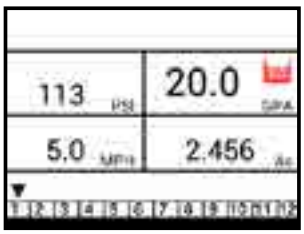
With both a pressure and flow sensor installed, the console determines when the flow rate has dropped below the capacity of the flow meter being used and will automatically switch to pressure-based regulation. When the flow rate reaches an acceptable level for the flow meter to regulate, the console will switch back to flow-based regulation.

Audible Alarms

A number of sensor alarms have been included in the 845-AB software. The alarm system is only active with Master on. All audible alarm signals can be cancelled by pressing any button. All alarms are reset when Master is switched off.

Alarm Name	Examples	Description	Audible Alarm Type
Rate Alarm		Too high difference between target and actual rate.	High Priority (3 short beeps, repeated every second)
No Speed Alarm		If speed is zero with master on, then no speed alarm is triggered and spraying is stopped.	Medium Priority (2 short beeps, repeated every second)
No Flow Alarm		If no flow pulses are received with master on and flow meter installed, a no flow alarm is triggered.	Medium Priority (2 short beeps, repeated every second).
No Pressure Alarm		If no pressure is measured with master on and pressure sensor installed, a no pressure alarm is triggered.	Medium Priority (2 short beeps, repeated every second).
Low Pressure Alarm		If pressure drops below minimum value with master on, a low-pressure alarm is triggered.	Medium Priority (2 short beeps, repeated every second).
Low Speed Alarm		If speed drops below minimum value with master on, a low-speed alarm is triggered and spraying is stopped.	Medium Priority (2 short beeps, repeated every second).

845-AB Sprayer Control System

Alarm Name	Examples	Description	Audible Alarm Type
Pressure Difference Warning		With flow based regulation, the controller (if pressure sensor installed) will compare the actual measured pressure with the calculated pressure (based on flow and nozzle type).	No audible alarm.
Flow Difference Warning		With pressure based regulation, the controller (if flow meter installed) will compare the actual measured flow with the calculated flow (based on pressure and nozzle type).	No audible alarm.
Tank Level Alarm		Current tank level drops below tank minimum.	Low Priority (1 short beep, repeat every second).

APPENDIX A – USER SETTING NOTES

System Setup

Description	User Setting
Units	
Speed Sensor Calibration	
Pressure Sensor Installed	
Pressure Sensor, Low Pressure Calibration	
Pressure Sensor, Maximum Rating	
Minimum Pressure	
Flow Meter Installed	
Flow Meter Calibration	
Flow Sensor Minimum Flow Capacity	
Regulation Mode	
Number Of Sections	
Flow Preset Reference Pressure	
Flow Presets Reference Flow	*No. 1*
	No. 2
	No. 3
	No. 4
	No. 5
	No. 6
	No. 7
	No. 8
	No. 9
	No. 10
	No. 11
	No. 12
Density	
Regulation Valve Type	
Regulation Speed Factor	
Section Valve Type	
Tank Size	
Minimum Tank Level	
Communication Mode	
Simulated Ground Speed — Low Speed	
Simulated Ground Speed — High Speed	
Minimum Speed	
Faces per Section (HC Mode Only)	

OEM Menu

Description	User Setting
Machine Type	
Minimum Regulation Valve Voltage	
Regulation Dead Band	
Regulation Time From Minimum to Maximum	
PWM Minimum	
PWM Maximum	
PWM Frequency	
Display Stablization Percentage	
Master Relay Installed	
Press Difference Alert Level	
Flow Difference Alert Level	
Block System Menu	
Block Manual Mode	
Block Boost Function	
Automatic Shutdown Time	

Application Setup

Description	User Setting
Row Width Preset	
Nozzles Per Face	
Target Application Rate	
Pressure Valve	
Speed	

845-AB SPRAYER

OEM SETUP MODE GUIDE

Enter OEM Setup Mode

To enter the OEM setup mode both the 845-AB console and Master Switch must be off.

Press and hold the PLUS ⊞ key and MINUS ⊟ key simultaneously while pressing the PROGRAM P key one time.

Wait for the display to show "Program menu OEM."

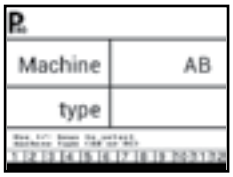
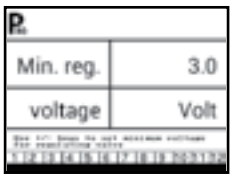
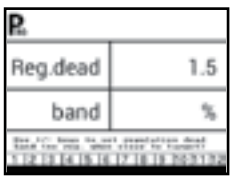
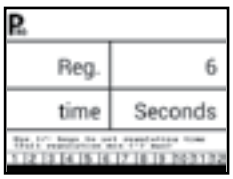
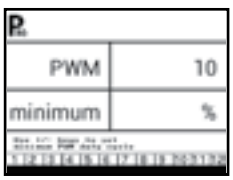
While continuing to press and hold the PLUS ⊞ key and MINUS ⊟ key simultaneously, press the PROGRAM P key 3 times within 3 seconds to confirm menu access.

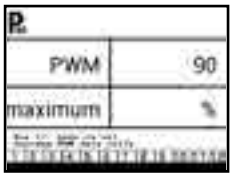
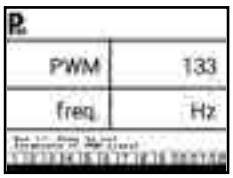
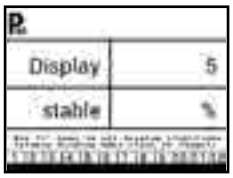
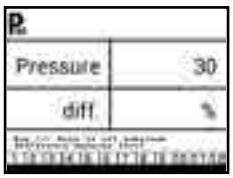
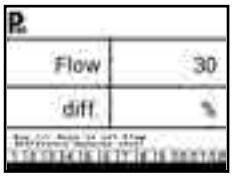
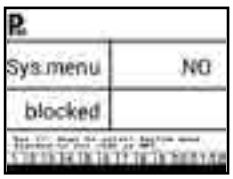
Exit OEM Setup Mode

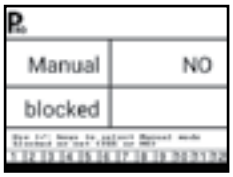
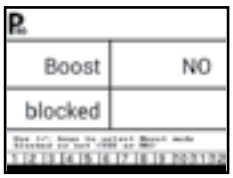
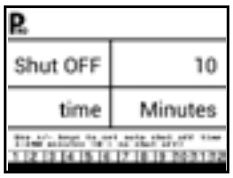
To exit the OEM setup mode the Master Switch must be off.

Press and hold the PROGRAM P key for 3 seconds.

The inputs are stored, and the console will enter the Operation Screen.

Setting	Display	Description	Default
Machine Type		Sets the type of sprayer the unit is going to be controlling. Two different Machine Types are available on the 845-AB: ▶ AB is short for Air Blast, used for orchard spraying. ▶ HC is short for High Clearance, used for vineyard spraying.	AB
Minimum Regulating Valve Voltage		Set the minimum voltage necessary for the regulating valve to move. *NOTE: This value has no effect when using PWM regulation.*	3.0
Regulation Dead Band		Set the regulation dead band percentage value. *NOTE: No regulation occurs when actual rate is within the dead band (+/-%) of the target rate.*	1.5%
Regulation Time from Minimum to Maximum		When using the standard regulating valve, enter the rotation speed. When using the PWM valve, enter the slope of change for the PWM signal (i.e. time for a change from minimum PWM to maximum PWM or vice versa).	6 seconds
PWM Minimum		Set the minimum PWM duty cycle percentage. There is no regulation below this value. *NOTE: This value has no effect when not using PWM regulation.*	20%

Setting	Display	Description	Default
PWM Maximum		Set the maximum PWM duty cycle percentage. There is no regulation above this value. *NOTE: This value has no effect, when not using PWM regulation.*	85%
PWM Frequency		Set the PWM frequency. When using PWM regulation, this is frequency specified for the proportional valve. When using a normal regulating valve, this valve should be set to 133 Hz.	133 Hz
Display Stabilization Percentage		Set the smooth display value. Display shows target rate when actual rate is within this band. Rate control still continues if above regulation dead band.	5%
Master Relay Installed		Select if the Master Relay is installed on the system. *NOTE: For the majority of 845-AB Sprayer Controllers (part number 75-50072), the master relay is not included.*	No
Pressure Difference Alert Level		Set the pressure difference warning level. The controller will compare the actual measured pressure with the calculated pressure (based on flow, tip type and tip spacing). If the actual pressure differs more than this setting from the calculated pressure, a Pressure Difference warning is triggered. *NOTE: The pressure difference warning level should normally be set to same value as the flow difference warning level.*	20%
Flow Difference Alert Level		Set the flow difference warning level. The controller will compare the actual measured flow with the calculated flow (based on pressure, tip type and tip spacing). If the actual flow differs more than this setting from the calculated flow, a Flow Difference warning is triggered. *NOTE: The flow difference warning level should normally be set to same value as the pressure difference warning level.*	20%
Block System Menu		Set if the System menu is to be blocked.	No

Setting	Display	Description	Default
Block Manual Mode		Set if the Manual Mode is to be blocked. *NOTE: If set to 'Yes', pressing the AUTO/MAN key to change the manual mode will have no effect.*	No
Block Boost Function		Set if the Boost function is to be blocked. *NOTE: If set to 'Yes', pressing the PLUS key or MINUS key with Master Switch on will have no effect.*	No
Automatic Shutdown Time		Set the time after which the console will automatically shutdown. The console is designed to power itself off after the programmed value if there are no inputs. This only occurs when the Master Switch is OFF and the sprayer is inactive (no speed or flow meter signals). *NOTE: Automatic Shutdown feature is disabled when console is in programming mode.*	10

845-AB SPRAYER

USER MANUAL

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98-05364-ENUS A4/LT R1 English-US