Outback STX
User Guide Supplement

This supplement details the following changes from STX v1.0 to STX v1.1:

Parts List

Added the following optional part to the Outback STX kit.

Part Number	Qty	Description	Photograph
051-0393-000#	1	Cable, GSI/AC110 (optional, purchased separately) Connects terminal to GSI device and AC110 rate control cable 054-0131-000#	

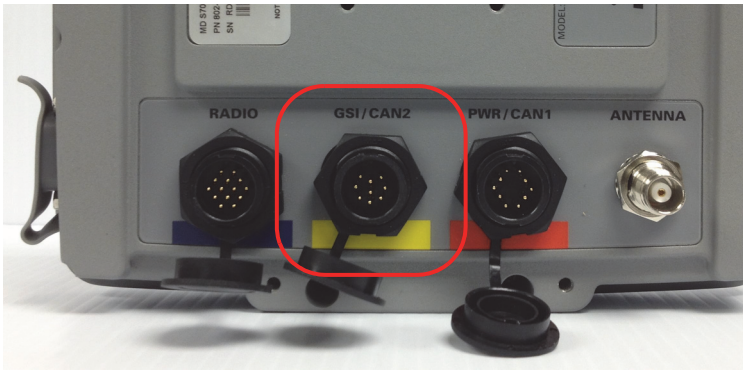
STX Terminal Overview

Updated the description for the CAN port to reference AC110 as follows:

- GSI/CAN2 port

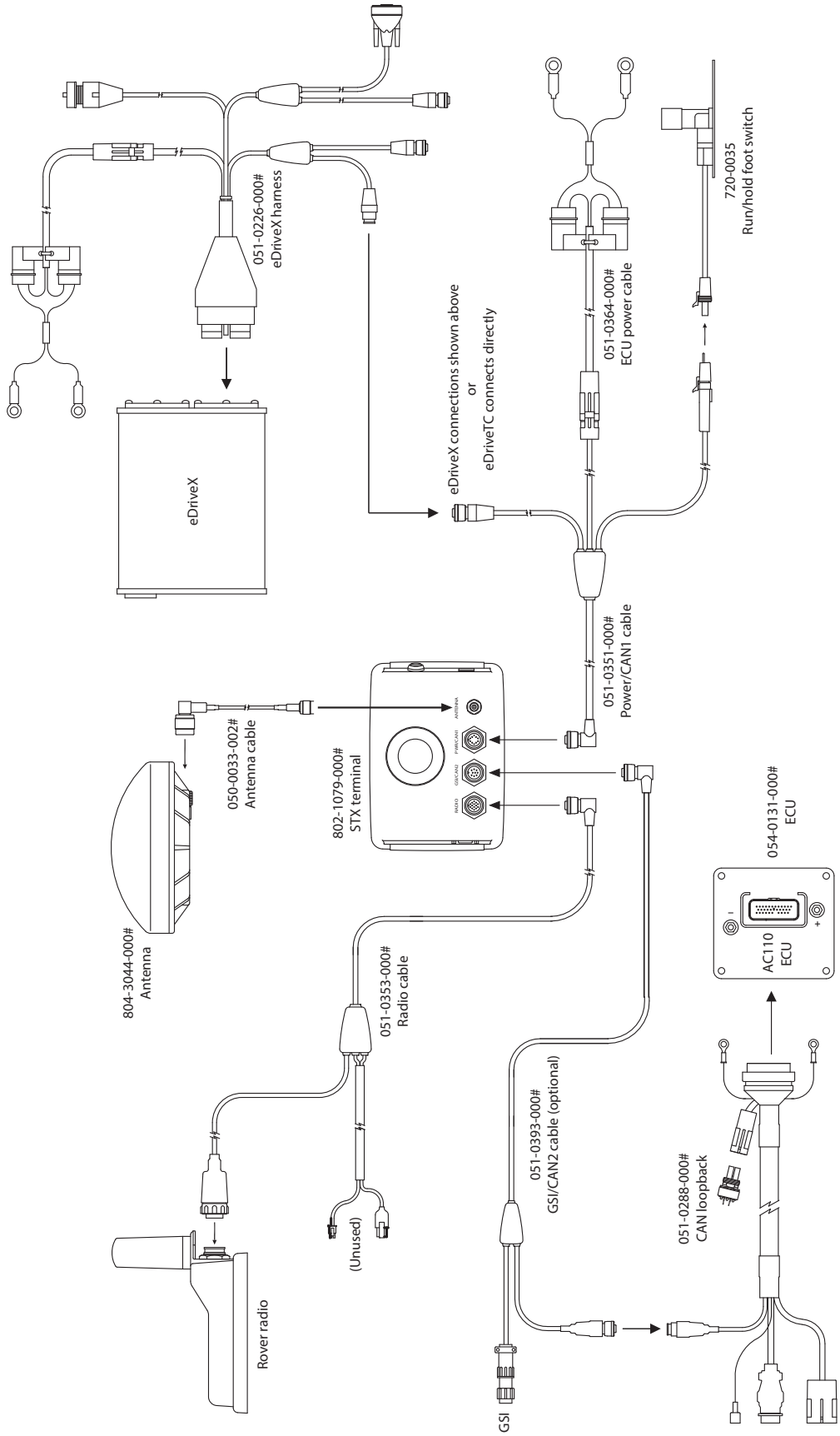
  9-pin, connects to GSI device and AC110

  The cable for this port is color coded yellow to match the port.



Connection Diagram

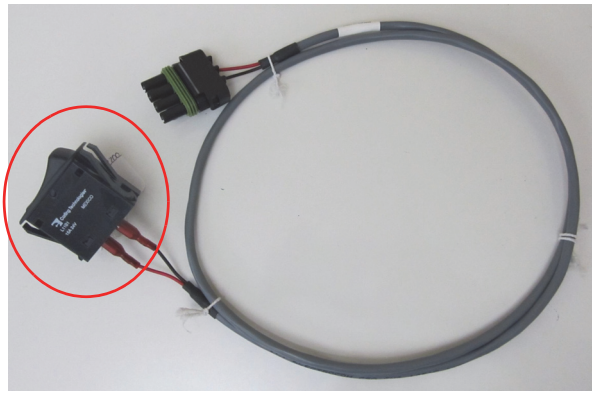
Updated the connection diagram to add eDriveX cabling and ECU, AC110 cabling and ECU, and the new GSI cable.



AC110 Power Up and Power Down Considerations

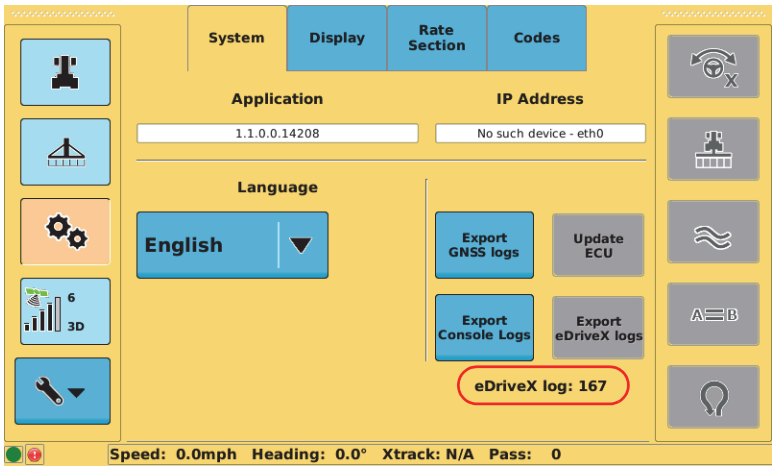
Adhere to the following when powering your system up and down.

- When powering up your system, turn the AC110 power switch to the ON position
- When powering down your system, turn the AC110 power switch to the OFF position



Exporting eDriveX Logs

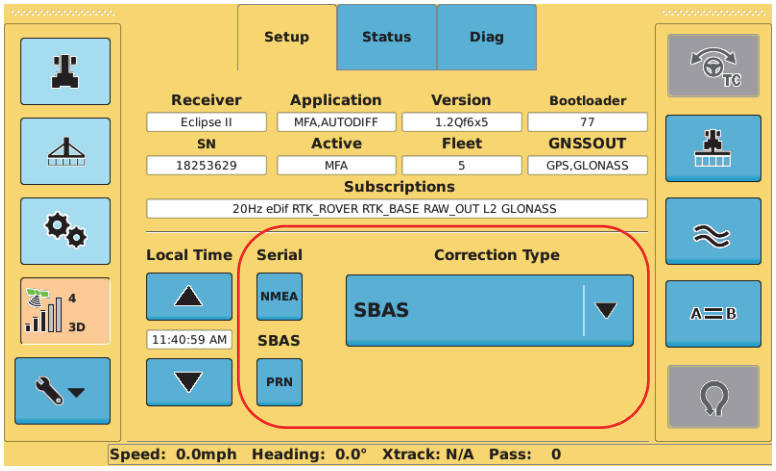
The current eDriveX log is displayed below the export logs buttons on the System screen (see at right).



GPS Setup Screen

The GPS Setup screen has been updated as follows (shown at right):

- The Serial and SBAS buttons are narrower
- The Correction Type drop-down replaced the four separate buttons. The functionality is the same but you now press the drop-down and select a correction type, with the selected type appearing on the drop-down.



Capturing Screen Images

The required name of the folder on a USB drive to which you capture screen images has changed from “S700” to “Screenshots”.

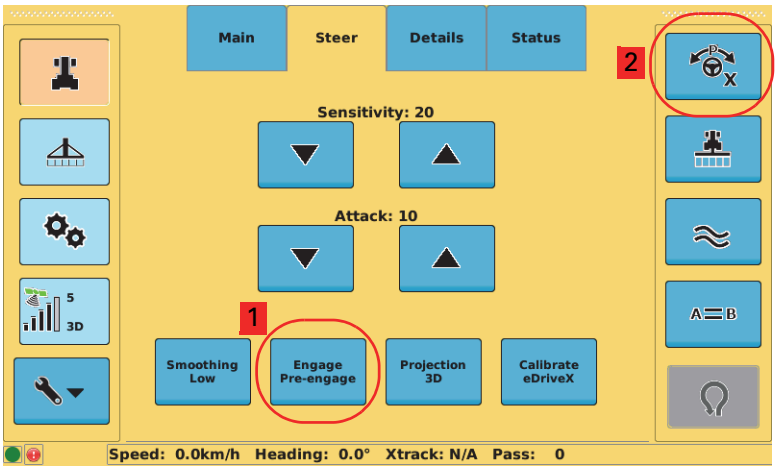
Pre-Engage

Pre-engage allows you to activate the Steering button before all engage requirements are met when starting from a stopped position. Once the requirements are met, STX automatically engages on a guideline.

You set up pre-engage during vehicle setup and calibration for eDriveX.

Pre-engage is a two-step process:

1. On the (Implement) Steer screen enable the pre-engage feature (make it available)—if the Engage button shows Manual then press **Engage** to switch to Pre-engage.
   - If you are not ready for autosteering, a 'P' appears on the Steering button (shown at right).
   - If you are ready for autosteering, the Steering button appears as normal.
2. Activate pre-engage—press the **Steering** button and when all engage requirements are met STX automatically engages on a guideline when beginning from a stopped position.

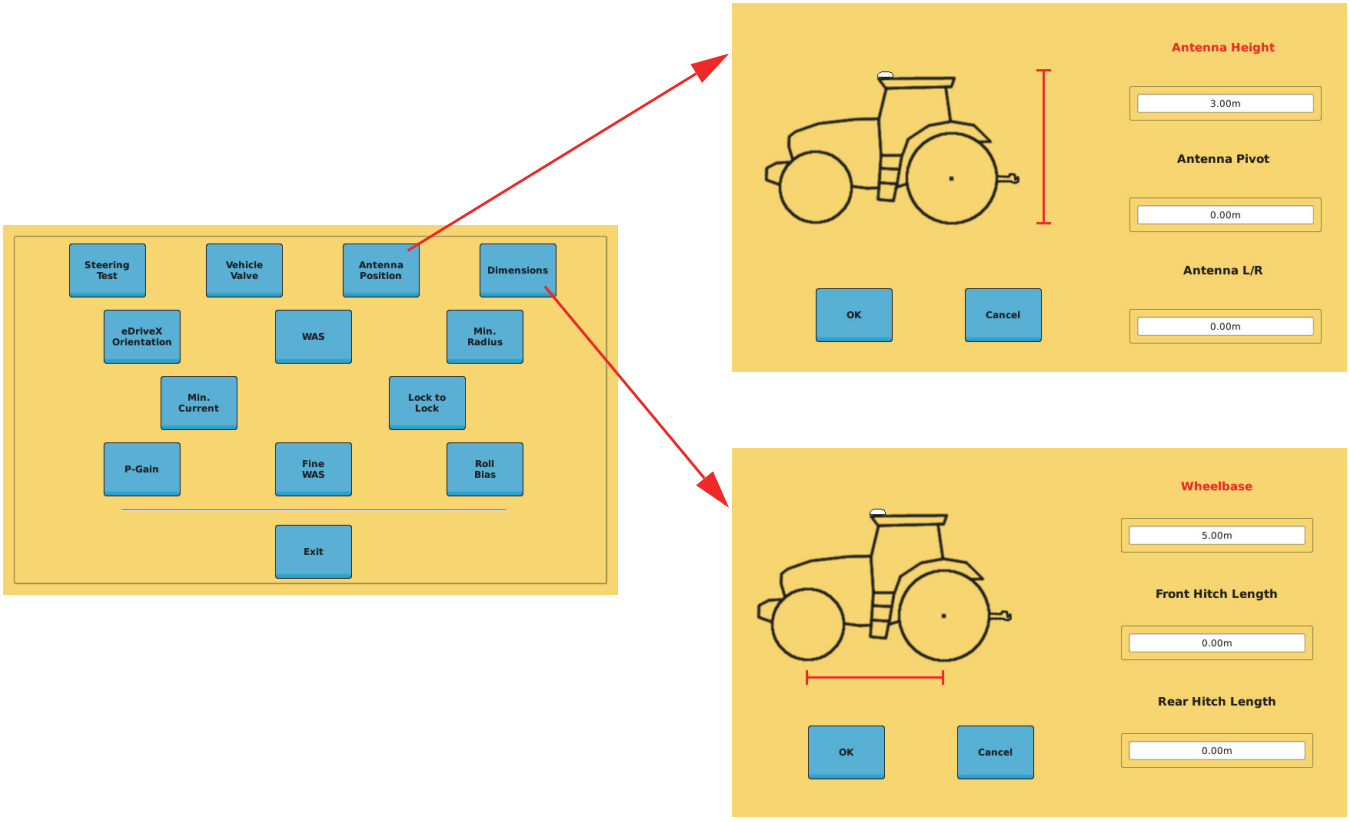


To turn pre-engage off press **Engage** again to set it to Manual.

eDriveX Vehicle Antenna Position and Dimensions

Previously, you pressed the Dimensions button on the Calibrate eDriveX screen to enter antenna position and wheelbase values. The Calibrate eDriveX screen now has separate buttons for antenna position and vehicle dimensions that each display a separate screen.

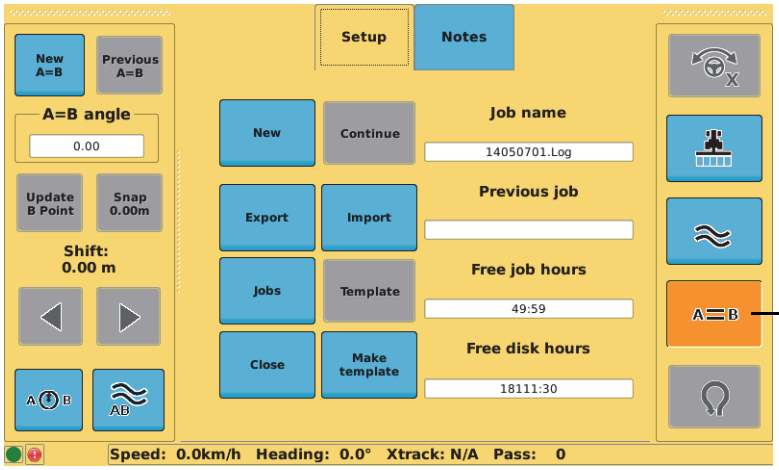
On the Dimensions screen the Front Hitch Length and Rear Hitch Length fields are new.



AB Contour Guidance

Note: AB Contour guidance is an eDriveX-only feature—you must have eDriveX installed on your system for AB Contour guidance to be available.

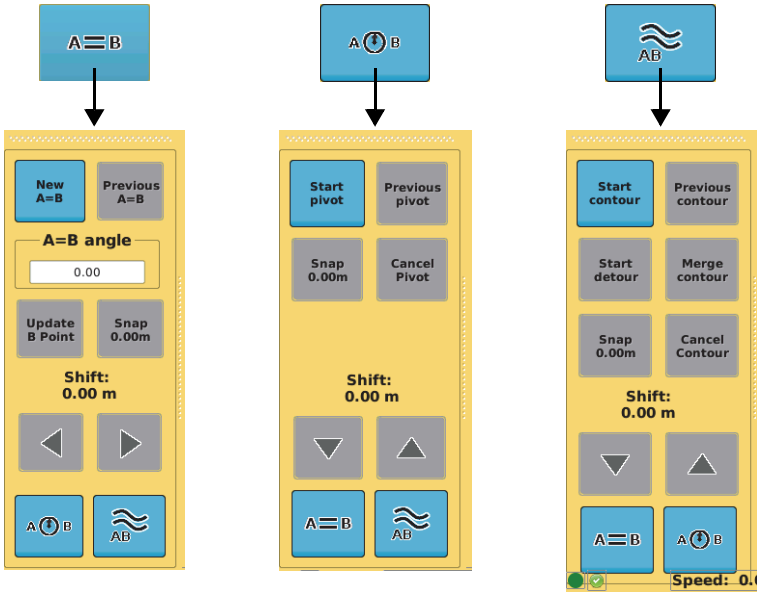
STX has added AB Contour Guidance functionality. You access AB Contour Guidance from the control button or from within the guidance window, as shown below.



Press this control button to display along the left side of the screen the guidance window that corresponds to the control button.

For example, pressing the Straight Guidance control button shown here displays the Straight Guidance window.

From within a guidance window you can switch to one of the other two guidance modes (excluding Contour Guidance) using the two buttons along the bottom of the window. For example, if you pressed the Straight Guidance control button to display the Straight Guidance window, you can then press the AB Contour Guidance button within the window to switch to AB Contour Guidance (the guidance window displays buttons associated with AB Contour Guidance).



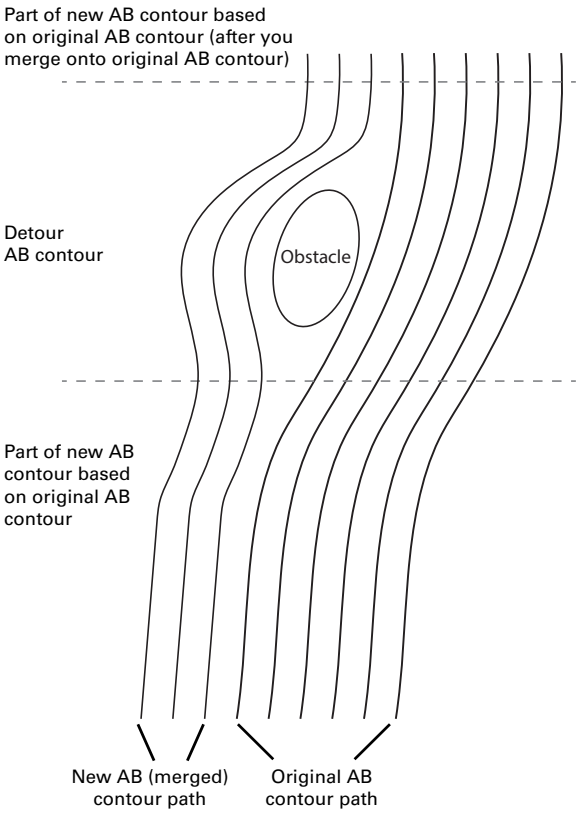
Straight Guidance window

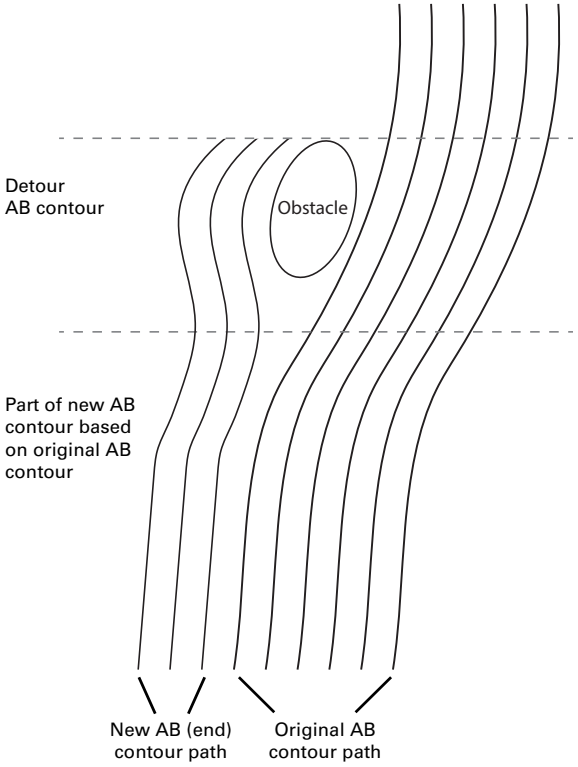
Pivot Guidance window

AB Contour Guidance window

AB Contour guidance allows you to create a reference guideline along a contour path. For example, if your field requires a curved path around an obstacle, you can create an AB contour for the initial passes and then create another AB contour to drive around an obstacle. The second AB contour can be in one of two forms:

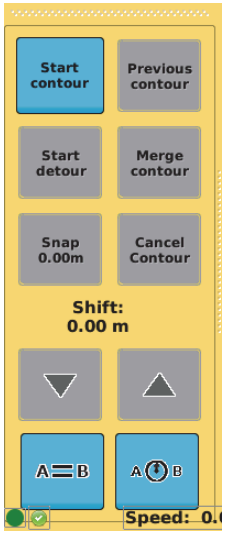
- A merged AB contour where STX combines your original AB contour (before your detour), your detour, and the continuation of the original AB contour (where you merge back onto the original contour)—left figure top of next page
- A new AB contour where STX combines your original AB contour (before your detour) and your detour—right figure top of next page





To start an AB contour:

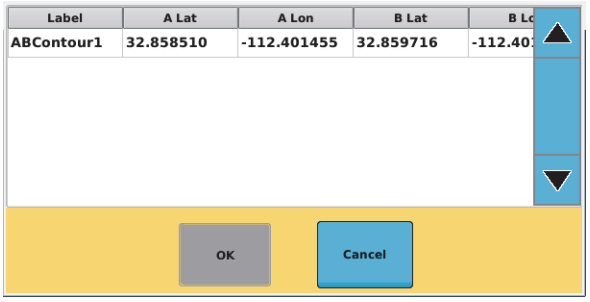
1. Position the vehicle at the beginning of the pass then display the AB Contour Guidance window (at right).
2. Press **Start contour**. The End contour button (gray) replaces the Start contour button, and, after you drive for a short distance a blue line guideline appears within the AB contour path and the End contour button becomes available (blue).
3. When you are finished driving your AB contour press **End contour**. Red guidelines extend from both ends of the AB contour to provide guidance.
4. Turn around and steer your vehicle to the next guidance line. As you get closer to the guidance line the Steering button changes to 'ready to engage'...press the Steering button to engage on the AB contour.
5. At the end of each pass repeat step 4.



Note: You can press Cancel Contour at any time before pressing End contour to cancel the AB contour.

To drive a previous AB contour:

1. Position the vehicle at the beginning of the pass then display the AB Contour Guidance window.
2. Press **Previous contour**. The AB Contours window appears (see at right).
3. Select an AB contour then press **OK**. The selected AB contour is applied to the Map screen.



To create a detour:

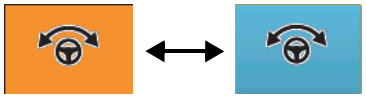
1. While driving along an AB contour and approaching an obstacle display the AB Contour Guidance window.
2. Press **Start detour** (this disengages autosteering and the End detour button replaces the Start detour button) and drive off the AB contour to avoid the obstacle.
3. After you pass the obstacle you can do one of the following:
   - Press **End detour** to create a new AB contour.
   - Drive toward the original AB contour, engage autosteering, wait for the Merge contour button to become available, then press **Merge contour** to create new merged AB contour.

Shuttle Shift and Re-engaging on a Line

For vehicles with shuttle shift functionality, you can shift between forward and reverse gears without using the clutch, enabling you to shift direction more quickly and easily. If you are engaged on an A=B line, pivot line, or contour line, you can automatically re-engage on your guidance line when switching from forward to reverse and vice versa.

An example of using shuttle shift is to line up in a headland when turning around.

The following scenario describes how shuttle shift works.



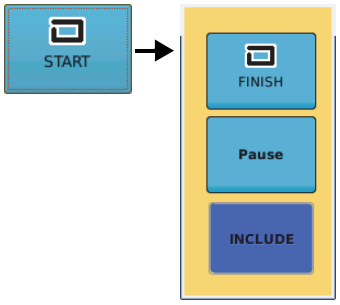
1. While engaged on a line, slow down and come to a stop. As you come to a stop STX disengages autosteering (the Steering button starts flashing between 'engaged' (orange) and 'ready to engage' (blue) states).

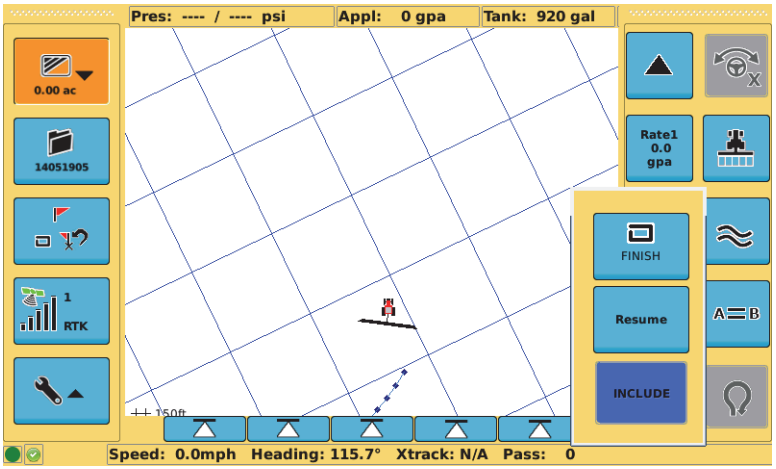
   You have approximately five seconds to automatically re-engage autosteering (by driving forward or in reverse); this is when the Steering button is flashing.
2. Start driving in reverse. The Steering button briefly flashes then STX automatically re-engages on the line (Steering button turns solid orange).
3. When you are ready to go in a forward direction again, slow down and come to a stop. As you come to a stop STX disengages autosteering (the Steering button starts flashing between 'engaged' and 'ready to engage' states).
4. Start driving forward. The Steering button briefly flashes then STX automatically re-engages on the line (Steering button turns solid orange).

Pausing and Resuming a Boundary

You can now pause and resume a boundary. For example, if you run out of spray while creating the boundary you can go back, refill your tank, and then come back and complete the boundary. You still start a boundary in the same manner: drive to the starting position of the field, press the Mark screen button then the Boundary button, select LEFT, CENTER, or RIGHT, select INCLUDE or EXCLUDE, then press START.

When you press START the Pause button appears in the middle of the Boundary window (at right). Drive your boundary as you normally would. Pressing **Pause** pauses boundary creation and the Resume button replaces the Pause button. The screen below shows the boundary paused and the vehicle moving away from the boundary.





When you are ready, return to this point (where you paused) and press **Resume** to continue creating the boundary. The Pause button replaces the Resume button. You then complete (finish) your boundary as you normally would.

Rate Control and Section Control

This section covers the following topics regarding rate control and section control using AC110 with Outback STX:

- Rate control and section control overview
- Rate control
- Section control
- Using rate control and section control
- Rate and section control diagnostics

Rate Control and Section Control Overview

Note: Rate control and section control are optional features available for Outback STX. Contact Outback Guidance Customer Service for information on rate control and section control systems compatible with Outback STX.

Outback AC110 includes the following rate and section application control benefits:

- Single product, liquid and anhydrous, constant rate control with straightforward calibration
- Automatic section control for up to ten sections with onscreen section display and section override functionality

After you install AC110 you must configure your implement for rate control, or section control, or both (depending on what equipment you have installed and the functionality you need). For example, if you need section control but no rate control, then you only need to configure section control settings in Outback STX.

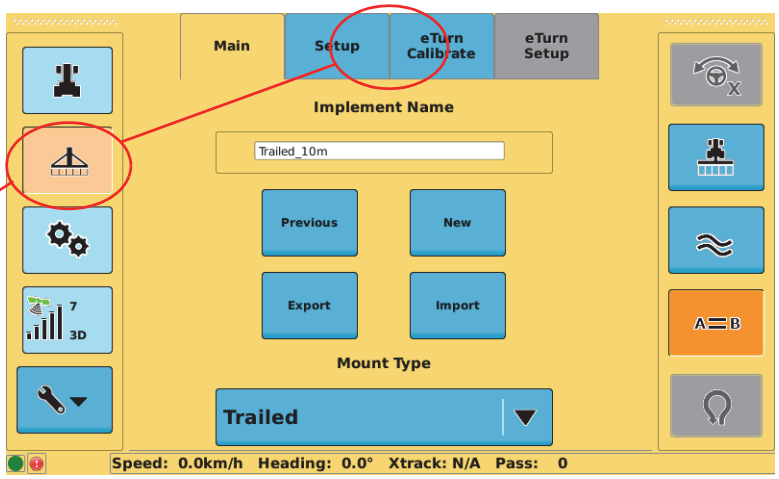
Display Changes with AC110 Connected

When you connect AC110 to Outback STX additional rate and/or section control screens, fields, and buttons are available for AC110 setup, calibration, and use.

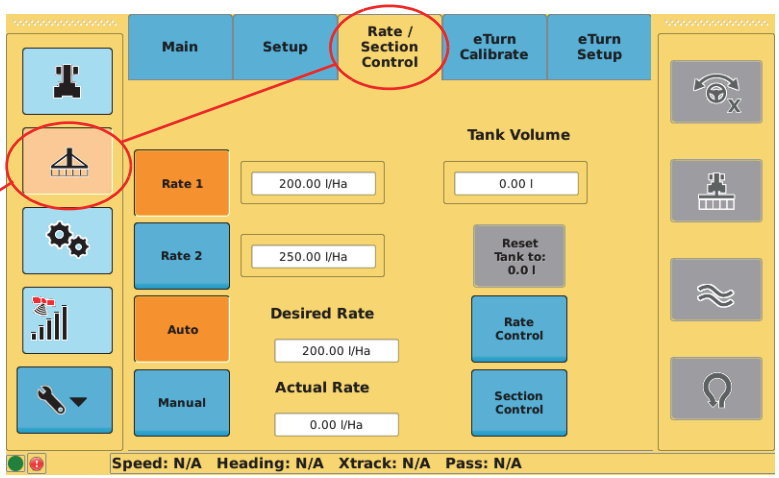
Rate/Section Control screen under Implements

Note: The eTurn Calibrate and eTurn Setup tabs shown at right only appear if STX is authorized for eTurns.

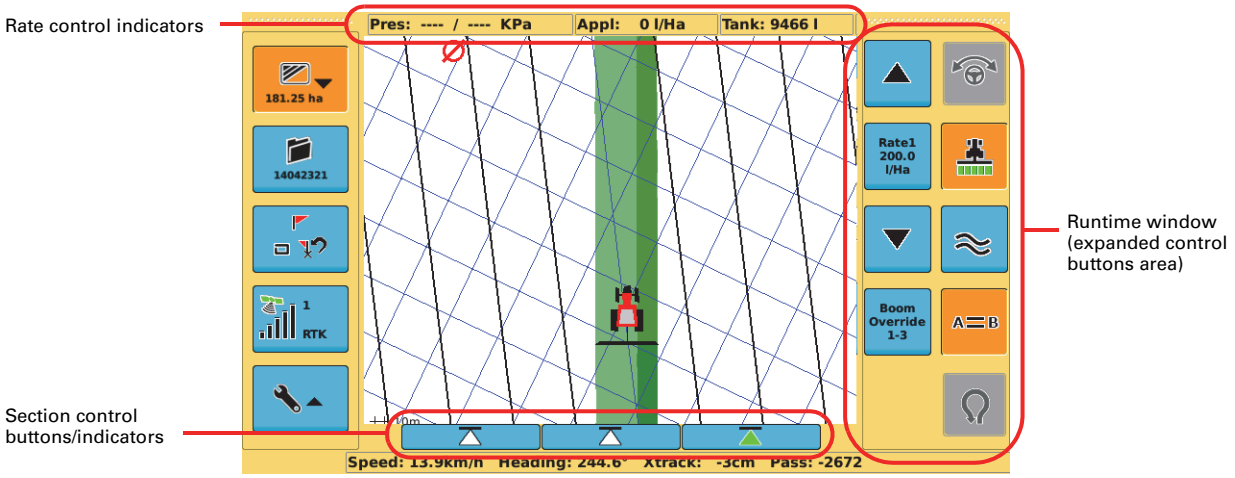
No AC110 connected
(no Rate / Section Control tab to right of Setup)



AC110 connected
(Rate / Section Control tab appears to right of Setup)



Rate/section control buttons and indicators when displaying the Map screen



Navigating Rate and Section Control Screens

When you first press the Rate / Section Control tab under Implements you see the Product Details screen.

- From the Product Details screen you can access the Rate Control screen and the Section Control screen
- From the Rate Control screen you can access the Section Control screen, the Product Details screen, and the Calibration Values screen
- From the Section Control screen you can access the Rate Control screen and the Product Details screen

When you display any of these screens the tab at the top of each screen (to the right of the Setup tab) will always show Rate / Section Control.

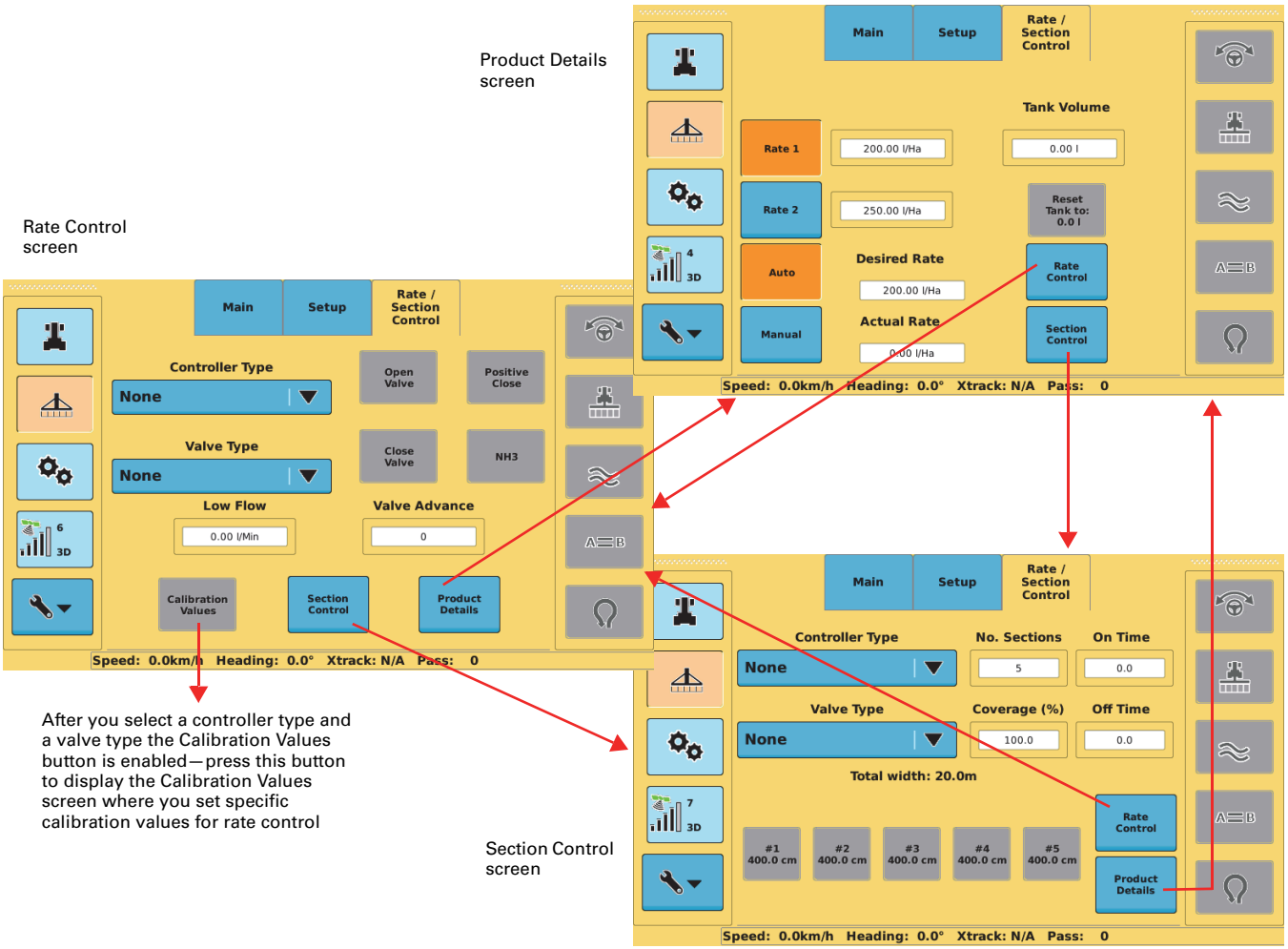


Figure 1: Navigating the rate and section control screens

Rate Control

Rate control functionality in Outback STX requires you to do the following:

1. Configure your implement for rate control
2. Calibrate the rate control valve
3. Set rate control parameters, such as flow rate and tank volume
4. Use rate control in your field

Configuring Your Implement for Rate Control

Note: This section describes how to configure an existing implement for rate control. You can also configure your implement for rate control when first adding the implement to Outback STX (you just have to complete some implement setup steps first before configuring the implement for rate control). Keep in mind that you must configure each implement that you will use for rate control.

Review "Rate Control and Section Control Overview" on page 8 before configuring your implement for rate control.

Use the Rate Control screen (at right) to configure your implement for rate control. Table 1 (starting below) describes each button/field on the screen.

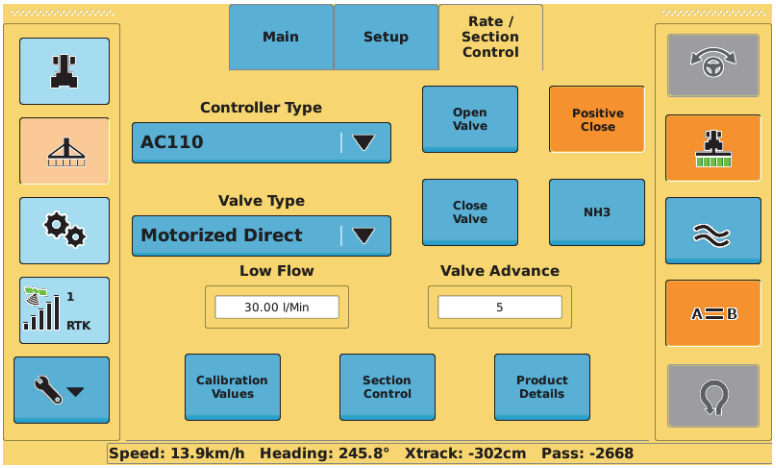


Figure 2: Rate Control screen

To display the Rate Control screen:

- Press the **Implement** screen button then press the **Rate / Section Control** tab at the top of the screen. The Rate/Section Control Product Details screen appears (see Figure 4 on page 14).

- Press **Rate Control**. The Rate Control screen appears (Figure 2 above—when you first display this screen no values will be selected or entered).

Table 1: Rate Control screen field/button descriptions

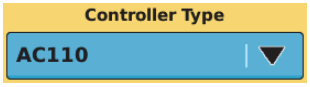
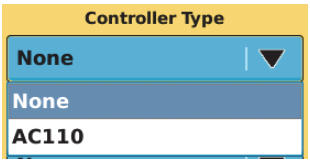
Field/Button	Description
 Expanded drop-down list 	Press the drop-down and select an item from the list. • Setting the Controller Type to AC110 displays the rate control indicators and buttons on the Map screen and enables all rate control functionality. • Setting the Controller Type to 'None' disables rate control functionality. Select this option if you are not using rate control.

Table 1: Rate Control screen field/button descriptions *(continued)*

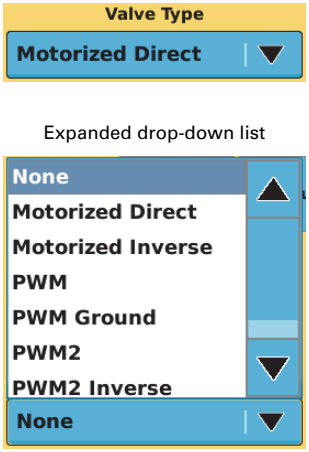
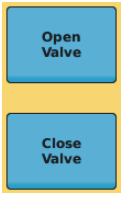
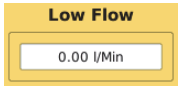
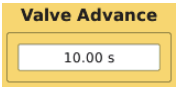
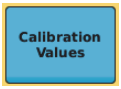
Field/Button	Description
	Press the drop-down and select an item from the list. **Motorized Direct** Two wire electric motor opens and closes the flow control valve to subsequently increase or decrease the application flow rate, respectively. **Motorized Inverse** Two wire electric motor opens and closes the flow control valve to inversely decrease or increase the application flow rate, respectively. **PWM** Electrohydraulic solenoid valve proportionally increases application flow rate with increased duty cycle (voltage). **PWM GROUND** Electrohydraulic solenoid valve proportionally decreases application flow rate with increased duty cycle (voltage). **PWM2** Similar to PWM but provides more stable control for some machines. **PWM2 Inverse** Similar to PWM Ground but provides more stable control for some machines. *Note: You must recalibrate your rate control after changing the valve type.*
	Useful in manually opening (press Open Valve) and closing (press Close Valve) the regulating valve to identify if you selected an incorrect rate Valve Type or if a cable is not connected.
	Press to toggle between enabled (orange) and disabled (blue), where enabled is for installations where the rate control valve is also used to stop and start product application (such as when no boom On/Off or section valves are present).
	Press to toggle between enabled (orange) and disabled (blue). • Enable for NH3 (anhydrous ammonia) control. Rate is in lbs nitrogen/acre (US) or kgs nitrogen/hectare (metric). Tank volume is in lbs or kgs of NH3. • Disable to set any other liquid as the application liquid.
	Without a Low Flow value the tips on your sprayer may shut off when flow drops below a certain rate (such as due to a drop in vehicle speed when traveling through a rough spot in the field). The Low Flow value you enter is the flow rate above which Outback STX will continue to spray (apply product) and not close the regulating value completely and will maintain a minimum flow independent of speed and number of sections closed. See “Determining the Low Flow Value for Your Implement” on page 15 for instructions on setting this value. If a low flow condition occurs while spraying the Applied field at the top of the Map screen turns red and several seconds later STX beeps repeatedly until you resolve the low flow situation.  Take corrective action (such as increasing vehicle speed if that is the cause) to increase flow rate.

Table 1: Rate Control screen field/button descriptions *(continued)*

Field/Button	Description
	**Applies to PWM and motorized valves** For PWM and Motorized valves you can enter a value to increase the valve position when coming out of headlands. For example, if spray comes on and briefly turns off when coming out of a headland (due to the boom having to recharge) you can enter a Valve Advance value to compensate for this. The range of Valve Advance values is from 0 - 20 for PWM and Servo/ motorized valves, where: • For PWM, 0 – 20 equals 0 – 30% increase from valve's current position • For Motorized, 0 – 20 equals 0 - 2000 ms When you are no longer applying product (Apply button displays Off): • For PWM, the system increases the valves position by the % you entered • For Motorized, the system opens the valve the specified number of ms before it normally does
	Press to display the Calibration Values screen where you calibrate rate control—see "Calibrating Rate Control" below.

Calibrating Rate Control

Note: Before calibrating for rate control make sure you have properly configured your implement for rate control. See the previous section "Configuring Your Implement for Rate Control" for more information.

You can perform calibration with the vehicle parked or moving. Perform the following before calibrating the flow:

- Make sure the tank is clean with several hundred gallons of water
- Unfold the booms and move the vehicle to a safe location
- Make sure the vehicle is running at the operating RPM used for spraying

You calibrate your system via the Calibration Values screen (Figure 3).

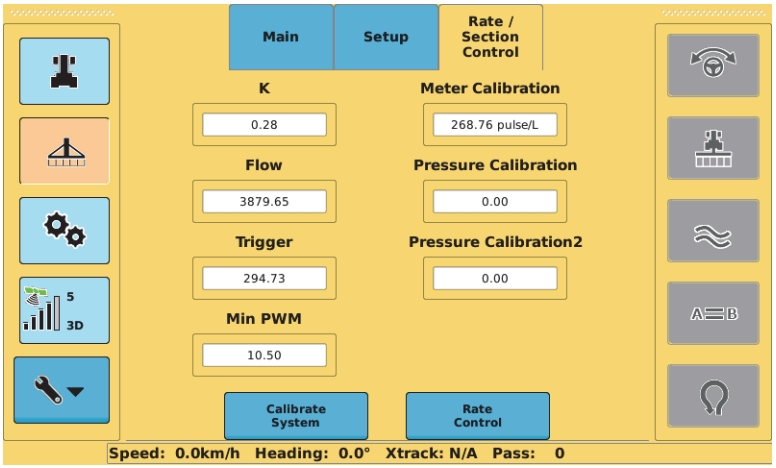


Figure 3: Calibration Values screen

Note: Under normal circumstances you will not enter values for the K, Flow, Trigger, and Min PWM fields—after you calibrate your system STX populates these fields. If you are troubleshooting a product application issue with the help of Outback Guidance Customer Service you may be directed to adjust these values.

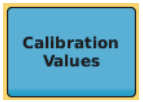
Also, the Calibrate System button at the lower left of the Calibration Values screen is disabled until you enter a Meter Calibration value.

To calibrate rate control:

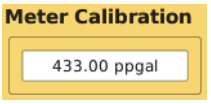
1. Press the **Implement** screen button then press the **Rate / Section Control** tab at the top of the screen. The Rate/Section Control Product Details screen appears (see Figure 1 on page 9).

2. Press **Rate Control**. The Rate Control screen appears (see Figure 2 on page 10).

3. Press **Calibration Values**. The Calibration Values screen appears (see Figure 3 on the previous page).

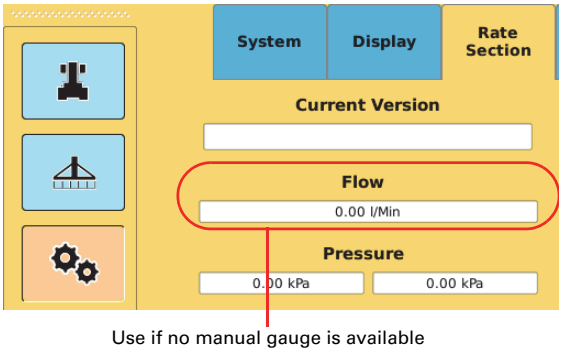


4. For the Meter Calibration field:
   a. Locate the meter calibration tag or stamp on the flow meter and the corresponding calibration value.
      – For Raven systems, divide the calibration number by 10 and enter this number.
      Example: If 169 is the calibration value, enter 16.9.
      – For TeeJet meters, enter the number as is.
      Many TeeJet meters list the calibration value in pulses/liter. It may be easier to change the units of measure in Outback STX to metric, enter the meter calibration, then change units back to U.S.
   b. Press the **Meter Calibration** field.
   c. In the window that appears enter a value then press **Apply**. The Calibrate System button is now enabled.



Note: Step 5 below only applies if your system supports pressure sensors. If your kit does not support pressure sensors the two Pressure fields in step 5b will be zero and the two pressure indicators at the top of the Map screen (see the first row of Table 3 on page 19) will not show any values.

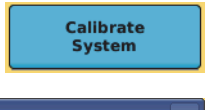
5. For the two Pressure Calibration fields:
   a. Enter a calibration value of 100 as a starting point (press the field, and in the window that appears enter a value then press **Apply**).
   b. Display the (Tools) Rate Section screen.
   c. Observe the pressure readings (the left pressure reading corresponds to the Pressure Calibration field and the right pressure reading corresponds to the Pressure Calibration2 field) and compare to that of a manual gauge.
      If no manual gauge is available, use the flow rate (Flow field shown circled at right) to calculate a pressure based on your spray tip orifice size.
   d. Return to the Calibration Values screen and adjust the Pressure Calibration and Pressure Calibration2 values up or down to make them match.

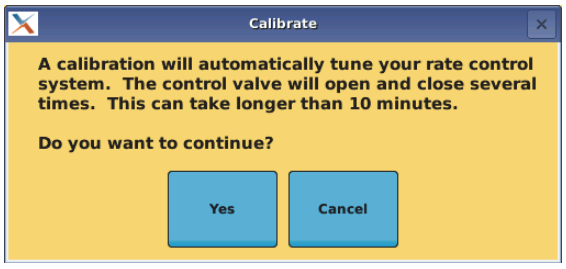


6. Perform the calibration.

Note: The Calibrate System button is disabled (gray) until you enter a Meter Calibration value in step 4.

   a. Press **Calibrate System** (at the bottom of the Calibration Values screen) to start the system calibration process—the Calibrate System button turns orange and a Calibrate message appears.
   b. Press **Yes**. The calibration process starts and may take up to 10 minutes. A progress message (with elapsed calibration time) appears during calibration.
      To cancel the calibration press **Cancel** in the message window.
   c. Once calibration is complete a message window appears—press **Ok** to close the message.





Setting Up Rate Control

Use the Rate/Section Control Product Details screen (Figure 4) to set rate (flow) control parameters.

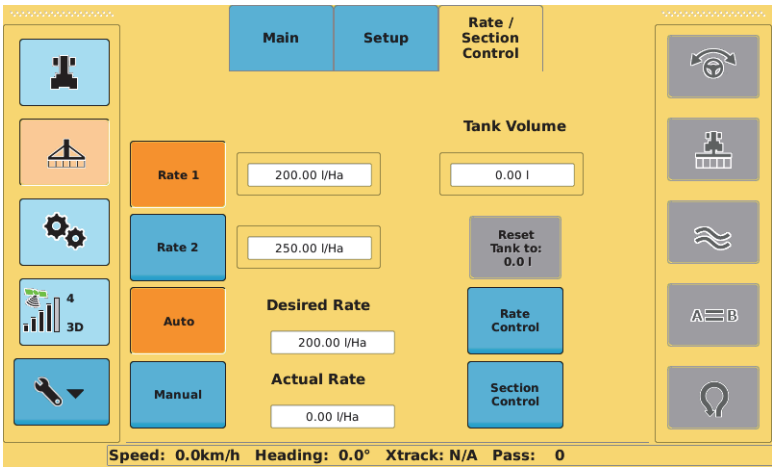


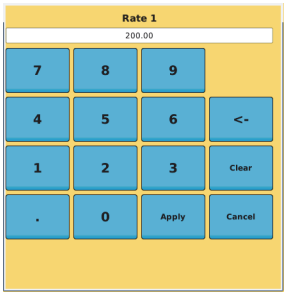
Figure 4: Product Details screen (rate/section control)

Note: Before setting up rate control review "Rate / Section Control Product Details Screen" on page 24 for information on each button/field on the Product Details screen.

To set up rate (flow) control:

1. Press the **Implement** screen button then the **Rate / Section Control** tab. The Rate/ Section Control Product Details screen appears (see Figure 4).

2. Enter flow rates for Rate 1 and Rate 2.
   a. Press the **Rate 1** field. The Rate 1 data entry window appears (shown at right).
   b. Enter a flow rate and press **Apply**. The data entry window closes and the rate appears in the Rate 1 field.
   c. Repeat steps a and b for Rate 2.

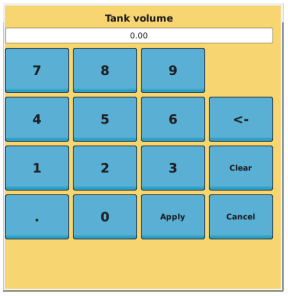


3. Select the rate you want to use—press either the **Rate 1** button or the **Rate 2** button (an orange button indicates the selected rate).

   Note: You can also select toggle between Rate1 and Rate2 by pressing the Rate button in the Runtime (expanded Control buttons) window. See Table 3 on page 19 for more information.

4. Enter the tank volume.
   a. Press the **Tank Volume** field. The Tank volume date entry window appears.
   b. Enter the tank volume and press **Apply**. The data entry window closes and the entered volume appears in the Tank Volume field.

   Note: You will need to adjust this value after each load—see next step.



5. To quickly reset the volume to full when refilling the tank press **Reset Tank to**. The Tank Volume field now displays the original tank volume.

Determining the Low Flow Value for Your Implement

Note: You must have a job open to enable the Rate Bump buttons in step 1 of the following procedure.

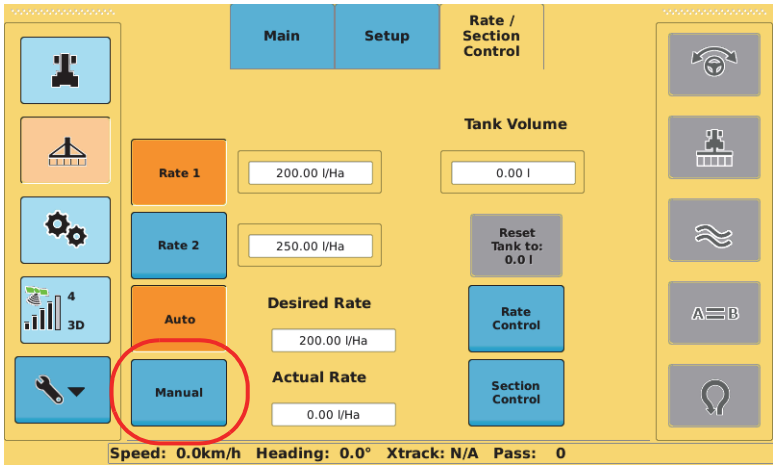
To determine the Low Flow value for your implement:

1. Identify the flow rate at which the spray tips begin to shut off.
   a. *Put the system in Manual mode*

   Press the **Implement** screen button then the **Rate / Section Control** tab to display the Rate/Section Control Product Details screen.

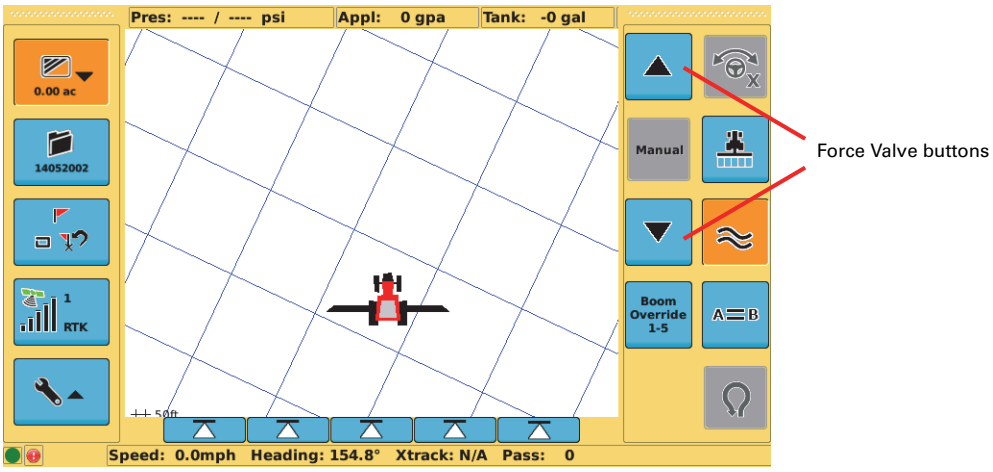
   

   Press **Manual** (circled below).

   b. *Adjust the rate*

   Display the Map screen—this automatically expands the Control Buttons window to display rate and section control buttons—then press the **Force Valve** down arrow to decrease the rate until the tips shut off (see "Using Rate Control and Section Control" on page 19 for more information).

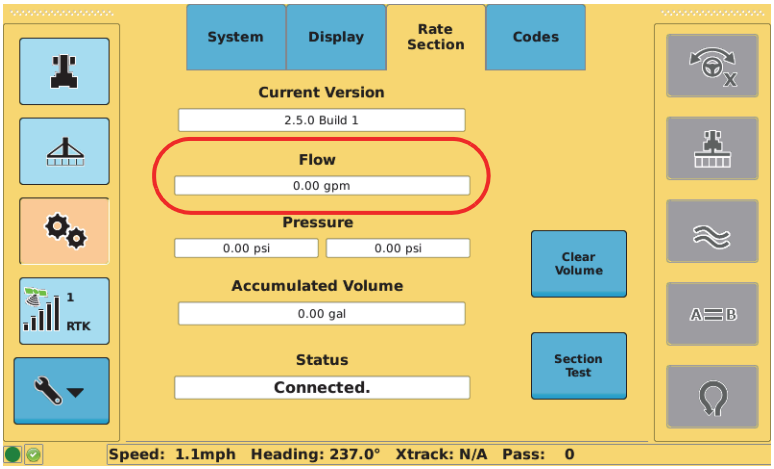
   

   c. *Identify what the flow value is on (Tools) Rate Section screen*

   Press the **Tools** screen button then press the **Rate Section** tab at the top of the screen. The Rate Section screen appears.

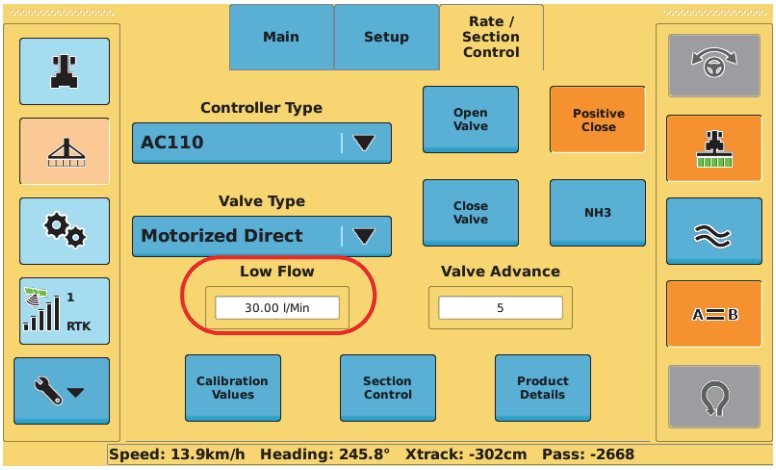
   

   Observe the value in the Flow field (see top of next page).

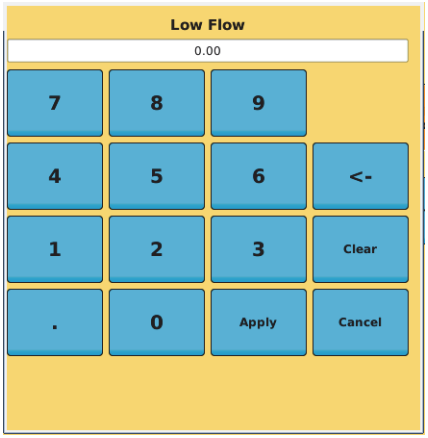


2. Enter a LowFlow Setting value that is slightly higher than the value from the previous step.
   a. Press the **Implement** screen button then press the **Rate / Section Control** tab at the top of the screen. The Rate/Section Control Product Details screen appears.

   Press **Rate Control** to display the Rate Control screen then press the **Low Flow** field.



   b. In the Low Flow window enter a value then press **Apply**.



Section Control

You must enter specific section control settings (see below) before using Outback STX for section control (see "Using Rate Control and Section Control" on page 19).

Configuring Your Implement for Section Control

Note: This section describes how to configure an existing implement for section control. You can also configure your implement for section control when first adding the implement to Outback STX (you just have to complete some implement setup steps first before configuring the implement for section control). Keep in mind that you must configure each implement that you will use for section control.

Review "Rate Control and Section Control Overview" on page 8 before configuring your implement for section control.

Use the Section Control screen (at right) and Table 2 (starting below) to configure your implement for section control.

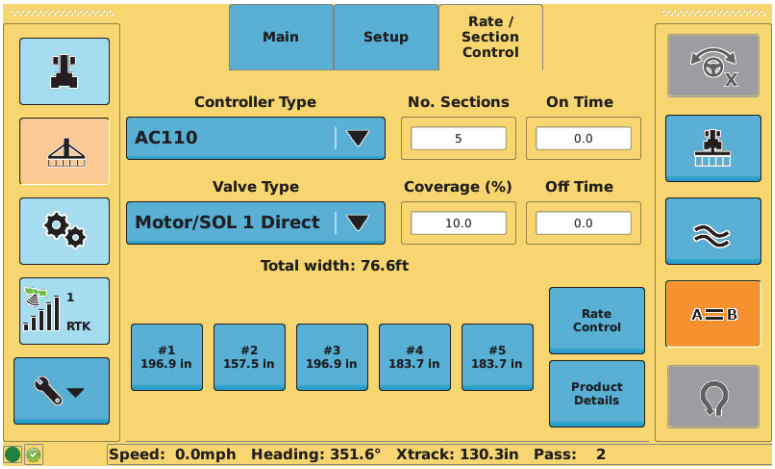


Figure 5: Section Control screen

To display the Section Control screen:

1. Press the **Implement** screen button then press the **Rate / Section Control** tab at the top of the screen. The Rate/Section Control Product Details screen appears (see Figure 4 on page 14).

2. Press **Section Control**. The Section Control screen appears (Figure 5 above—when you first display this screen no values will be selected or entered).

Table 2: Section Control screen field/button descriptions

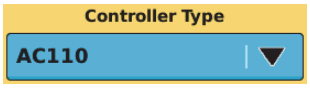
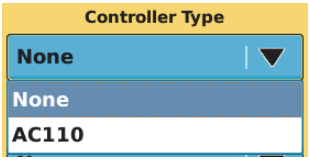
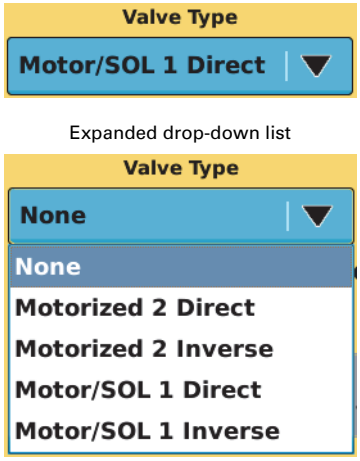
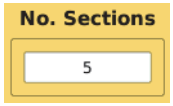
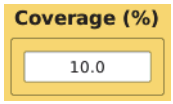
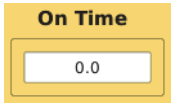
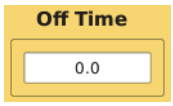
Field/Button	Description
 Expanded drop-down list 	Press the drop-down and select an item from the list. • Setting the Controller Type to AC110 displays the section control indicators on the Map screen and enables the Boom Override button. • Setting the Controller Type to 'None' disables section functionality. Select this option if you are not using section control.

Table 2: Section Control screen field/button descriptions *(continued)*

Field/Button	Description
	Press the drop-down and select an item from the list. **Motorized 2 Direct** Electric motorized valve that is: 1. Driven open with a positive voltage signal. 2. Driven closed by a negative voltage signal across two signal wires. **Motorized 2 Inverse** Electric motorized valve that is: 1. Driven open with a negative voltage signal. 2. Driven closed by a positive voltage signal across two signal wires. **Motor/SOL 1 Direct** Electric motor or solenoid valve that is: 1. Driven open with a single positive voltage signal. 2. Returned to a closed position by a spring or other automatic means. **Motor/SOL 1 Inverse** Electric motor or solenoid valve that is: 1. Driven closed with a single positive voltage signal. 2. Returned to an opened position by a spring or other automatic means.
	Press to display the Number of Sections data entry window where you set the number of sections. STX supports a maximum of ten sections. The number you enter determines the number of section buttons that appear at the bottom of the Section Control screen.
	Press to display the Coverage data entry window where you enter the percentage of the boom section that must enter or exit a previously applied area before AC110 will turn it off or on.
	Press to display the On Time data entry window. Enter the number of seconds needed to open the boom valves and build pressure ahead of an unapplied area. Increase the number to turn on sooner.
	Press to display the Off Time data entry window. Enter the number of seconds needed to close the boom valves ahead of a previously applied area. Increase the number to turn off sooner.
	Press any section button to display a data entry window where you enter the section width for that section. Since you can only set each section width individually each change you make affects the total implement width (Implement Width field on the Implement Setup screen). *Note: When AC110 is connected and powered on, the Implement Width field on the (Implement) Setup screen is read-only. When AC110 is powered off, the Implement Width field is editable. This enables STX to store the settings for rate and section control while enabling you to change the implement width for other uses.*

Using Rate Control and Section Control

When using rate/section control you can:

- Increase or decrease the selected rate incrementally
- Override individual sections
- Toggle all sections between an Auto state and override state
- Turn off all sections at any time

After you set up rate/section control you work with rate/section control via the Map screen (Figure 6) and the rate/section control indicators and buttons.

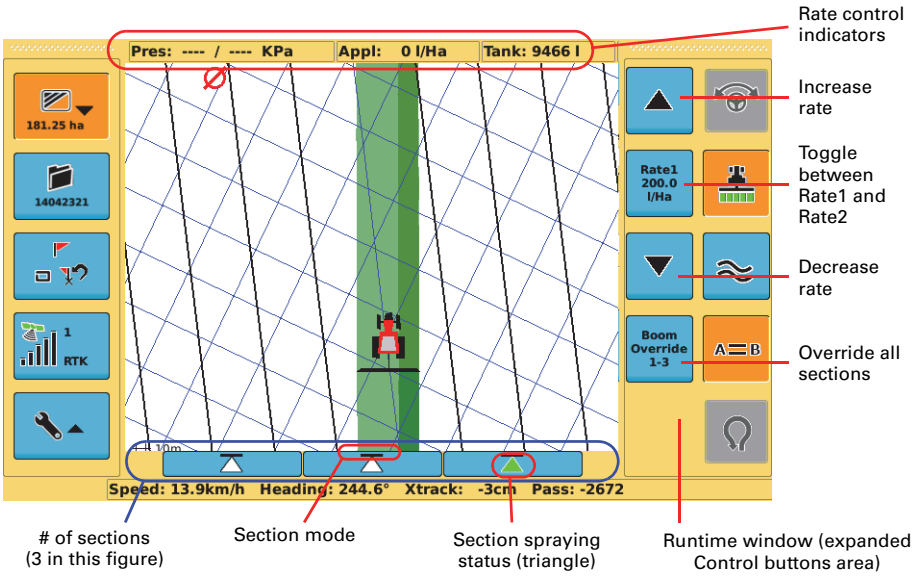


Figure 6: Map screen showing rate/section control

Before you begin using rate/section control review the screen item descriptions in Table 3 below:

Table 3: Map screen item descriptions for rate/section control

Screen Item	Description
Pres: ---- / ---- KPa Appl: 0 l/Ha Tank: 9466 l	Indicators along top of Map screen • Pres: liquid rate control pressure (see "Calibrating Rate Control" on page 12 for information on calibrating these two values) • Appl: Actual application rate calculated from the flow meter (under a low flow condition or if the actual rate is off by 10% from the target rate this field appears red)—see Table 1 on page 10 and "Determining the Low Flow Value for Your Implement" on page 15 for more information • Tank: Volume remaining in tank that decreases as you spray (see "Setting Up Rate Control" on page 14 on how to initially set the tank volume)

Table 3: Map screen item descriptions for rate/section control *(continued)*

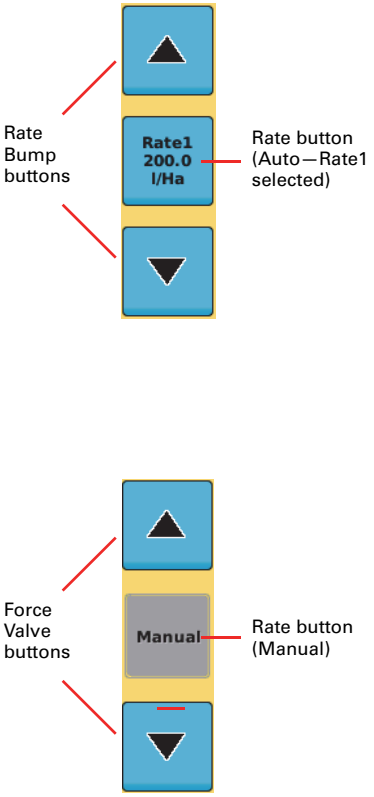
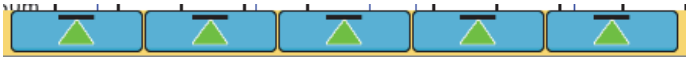
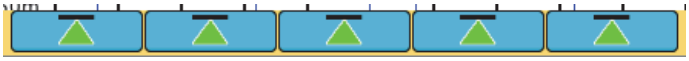
Screen Item	Description
	The functionality of the Rate button and the two arrow buttons differ depending on whether you select Auto mode or Manual mode on the Product Details screen. See Figure 1 on page 9 and "Rate / Section Control Product Details Screen" on page 24 for more information on the Rate buttons on the Product Details screen. If you select Auto mode on the Product Details screen: • When you first display the Map screen, the rate indicated on the Rate button correlates to the Rate button (Rate 1 or Rate 2) you pressed on the Product Details screen. The Rate button shown at left enables you to select either rate to apply on the fly (toggle between Rate1 and Rate2). • Use the Rate Bump buttons to increase/decrease the target rate in 1 gallon or 10 liter increments. • When you press either Rate Bump button to change the rate the rate displayed on the Rate button increments/decrements. • If the actual rate is off by 10% from the target rate the Applied field at the top of the Map screen turns red and several seconds later STX beeps repeatedly until you resolve the low flow situation. Take corrective action (such as increasing vehicle speed if that is the cause) to increase flow rate.  If you select Manual mode on the Product Details screen: • The Rate button displays "Manual" (for display only—pressing this button has no effect). • Press the Up arrow to force the control valve open. • Press the Down arrow to force the control valve closed.
	Press the Boom Override button to toggle all sections between Auto mode (Boom Override button blue) and manual override (orange—all section valves forced open).

Table 3: Map screen item descriptions for rate/section control *(continued)*

Screen Item	Description
 Auto mode No spraying  Auto mode Spraying  Manual OFF No spraying  Override ON Spraying  Override ON No spraying	Each section is represented by a horizontal bar and a triangle. For example, if you configured STX for five sections then five sections appear along the bottom of the Map screen. The horizontal bar above each triangle represents the section mode and the triangle represents spraying or no spraying. See the examples at left for the different combinations. The horizontal bar can be: • Black (Auto mode) • Green (override mode—manually forced ON) • Red (manually forced OFF) Each triangle can be: White (section OFF - no spraying) Green (section ON - spraying) Repeatedly pressing the sections along the bottom of the Map screen cycles through different options, as illustrated in the following five-section example. • After setting up rate/section control the sections appear along the bottom of the Map screen (sections are in Auto mode with no spraying)  • Press **Apply** to start spraying in all sections  • Press the far left and far right sections once each to manually force them OFF (no spraying)  • Press the far left and right sections again to override them (spraying ON, even if in already applied areas)  • Press the far left and right sections once more to return to Auto mode spraying  • Press Boom Override to override all sections (spraying ON, even if in already sprayed areas) 

Rate and Section Control Diagnostics

Regardless of whether you have AC110 connected or not the Rate Section screen under Tools (Figure 7 at right) is always available. You use this screen to:

- View read-only rate control information
- Clear volume
- Perform a section test

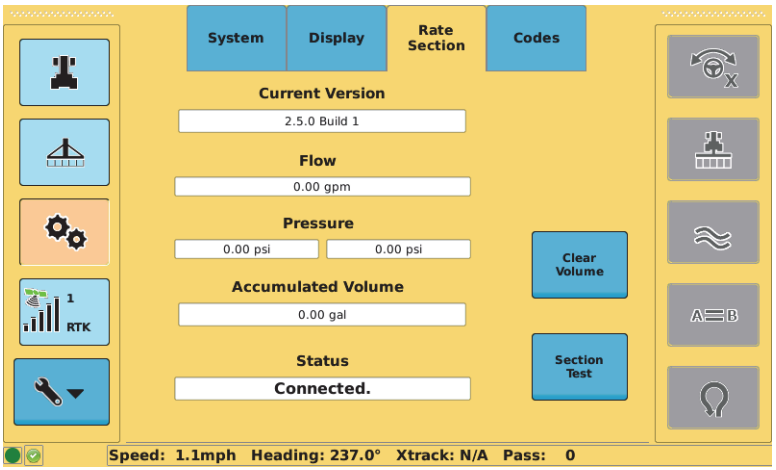


Figure 7: (Tools) Rate Section screen

Table 4 on page 23 describes the fields/buttons on the Rate Section screen. Use this table as a reference for the tasks following the Note below.

Note: The Clear Volume button is not enabled until AC110 is connected and you select a Controller Type on the Rate Control screen—see "Configuring Your Implement for Rate Control" on page 10. The Section Test button is not enabled until AC110 is connected and you select a Controller Type on the Section Control screen—see "Configuring Your Implement for Section Control" on page 17.

To clear the Accumulated Volume field:

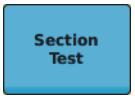
1. Press the **Tools** screen button then press the **Rate Section** tab at the top of the screen. The Rate Section screen appears (Figure 7 above).

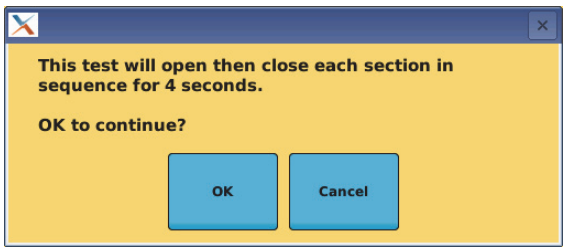
2. Press **Clear Volume**. The Accumulated Volume field resets to zero.

To perform a section test:

1. Press the **Tools** screen button then press the **Rate Section** tab at the top of the screen. The Rate Section screen appears (Figure 7 above).

2. Press **Section Test**. The following message appears.





3. Press **OK**.

Additional Rate and Section Control Screen Information

This section describes the buttons and fields on the Rate Section screen and the Product Details screen.

Rate Section Screen

Table 4 describes the buttons and fields on the Rate Section screen (Figure 8 at right).

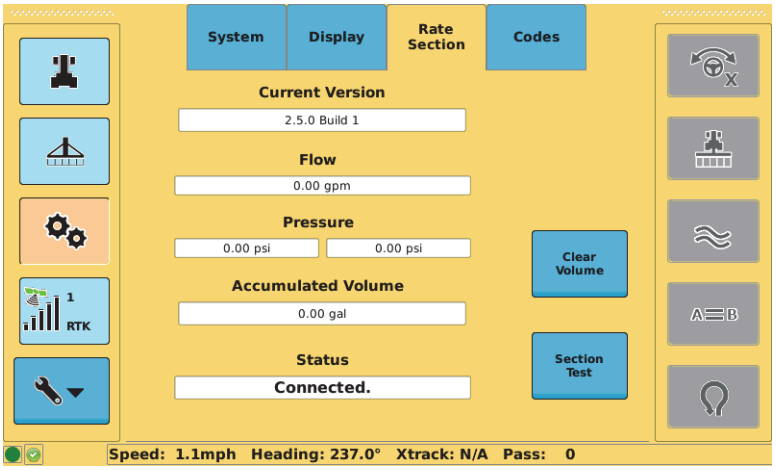


Figure 8: Rate Section screen

Table 4: Rate Section (Tools) screen button/field descriptions

Button/Field	Function/Description
Current Version 2.5.0 Build 1	AC110 software version currently installed.
Flow 0.00 gpm	Current flow rate.
Pressure 0.00 psi 0.00 psi	Liquid rate control pressure. See “Calibrating Rate Control” on page 12 for more information on how these values relate to calibrating your rate control.
Accumulated Volume 0.00 gal	Total product applied until you clear (reset to zero) it by pressing Clear Volume (see later in this table). For example, you may want to record all product volume applied for a season or for a job.
Status Connected.	AC110 connection status (Connected or Disconnected).
Clear Volume	Press to clear the Accumulated Volume field. See “Rate and Section Control Diagnostics” on page 22 for more information.
Section Test	Press to perform a section test. See “Rate and Section Control Diagnostics” on page 22 for more information.

Rate / Section Control Product Details Screen

Table 5 describes the buttons and fields on the Product Details screen (Figure 9 at right).

This screen only appears if you have AC110 installed.

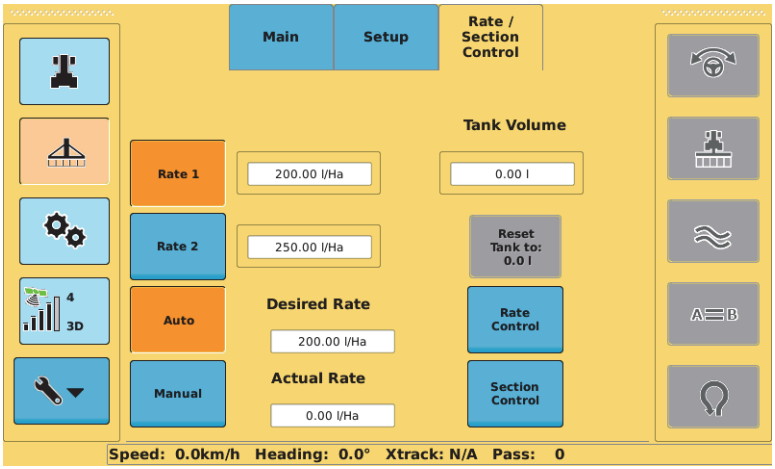
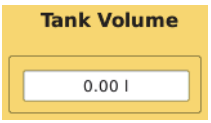


Figure 9: Product Details screen

Table 5: Product Details screen button/field descriptions

Button/Field	Function/Description
	Press either field to the right of the Rate buttons to enter a predefined value for that rate. The rate button that is orange is the selected rate (Rate 1 at left)—the other rate is automatically blue (not the selected rate). To select the other rate press the blue (non-selected) rate button. *Note: If necessary, you can change the rate on the fly during application using the Rate button on the Runtime window (expanded Control buttons window)—see "Using Rate Control and Section Control" on page 19.*
	Press to toggle between enabled (orange) and disabled (blue). When enabled (orange), STX automatically controls the predefined rate you select.
	Press to toggle between enabled (orange) and disabled (blue). When enabled (orange), the regulating valve can only be opened or closed using the Force Valve buttons (up/down arrows) on the Runtime window—this is useful if the flow meter quits working and you want to keep applying.
	Desired Rate: Target rate—this is the selected rate (based on the selected Rate button) plus or minus any manual rate bumps. Actual Rate: Flow rate calculated from the flow meter.
	Press to display the Tank Level data entry window, where you enter the volume of product in the tank. You will need to adjust this value after each load. While spraying, Outback STX subtracts from this value what has been applied and this current volume appears in the Tank Volume field.
	Press to reset the tank volume to the original level you entered for the Tank Volume field (see previous row in this table). This enables you to reset the tank level to full with one button push when refilling the tank; otherwise, you have to re-enter data values for a full tank in the Tank Volume data entry window.
	Display the Rate Control screen.
	Display the Section Control screen.