PARTS OF THE CONTROLLER

This figure shows the front panel of the EZ-Boom™ 2010 automated application control system:

Status indicator
Rate switch
Rate adjustment (inc/dec) switch
Master switch
Boom section switches
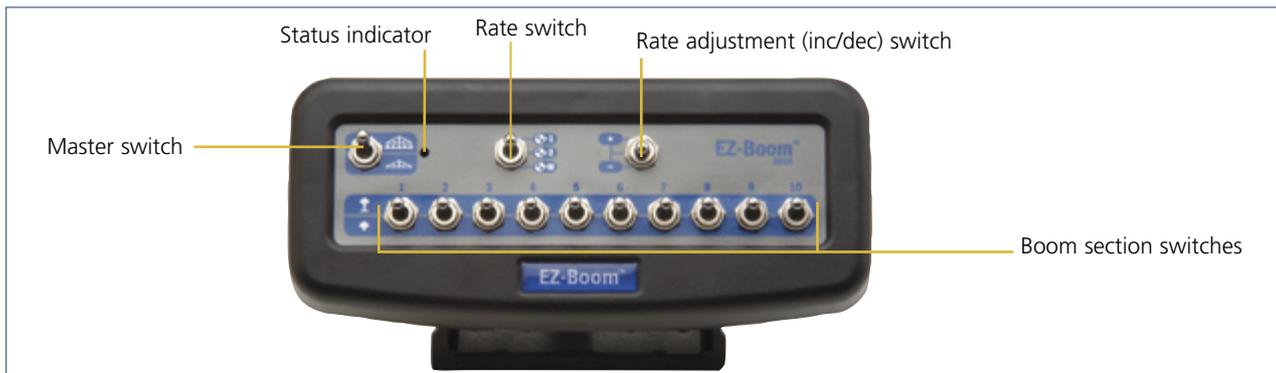
OPERATION

When the EZ-Boom 2010 system is connected to the EZ-Guide® 500 lightbar guidance system, the EZ-Boom quick settings icon appears among the fast keys on the left of the lightbar display. The EZ-Boom quick settings icon provides quick-access to some of the most common EZ-Boom system settings. The sprayer bar at the base of the screen indicates the state of the spray sections:

EZ-Boom information tab

EZ-Boom quick settings icon

Target rate to be applied

Rate switch position

The boom section is currently spraying

The boom section is on, but not spraying

The boom section is disabled (the switch is off)

Actual rate currently being applied

Automatic/manual boom switching indicator

Color = Automatic
Black and white = Manual

A fence nozzle is enabled

CONFIGURATION PROCESS

To configure the EZ-Boom 2010 system, complete the following steps:

Step	Action
1	Install and connect the hardware.
2	Set the lightbar to Advanced mode.
3	Configure the boom.
4	Configure automatic boom switching.
5	Configure application.

Step	Action
6	Configure the flow control valve.
7	Configure the tank.
8	Calibrate the pressure sensor (if fitted).
9	Calibrate the flow meter.

For a detailed description of each step, see the following pages.

www.EZ-Boom.com

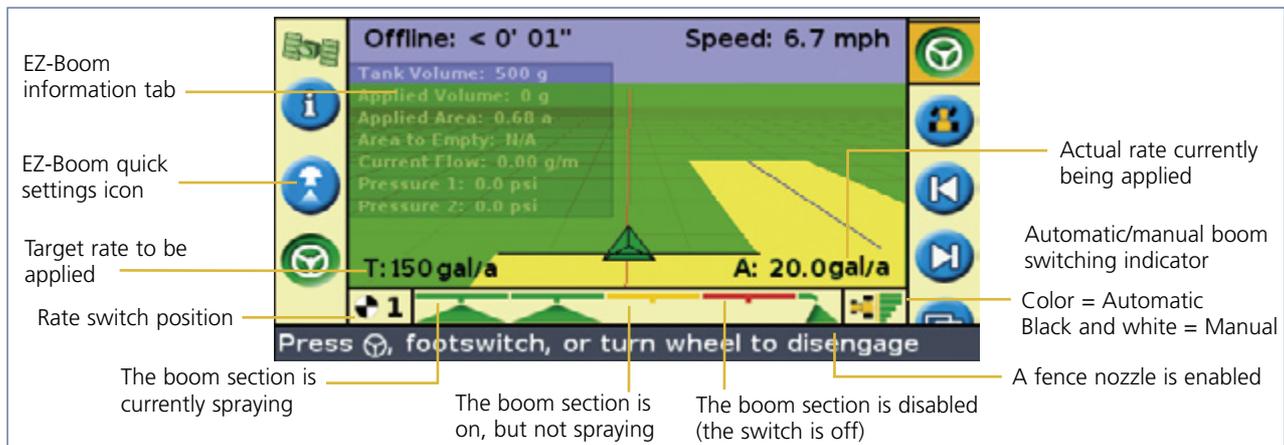# EZ-Boom™ 2010 System for the EZ-Guide® 500 Lightbar Quick Reference Card

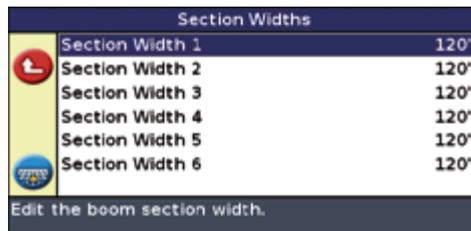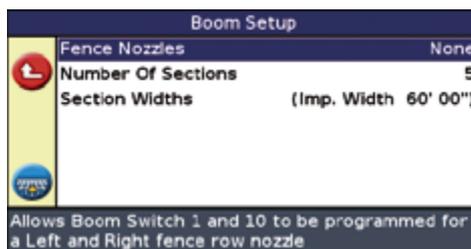## STEP 1. CONNECTING THE EZ-BOOM 2010 SYSTEM

For information on connecting the EZ-Boom 2010 system to the lightbar, refer to the *EZ-Boom 2010 Automated Application Control System Cabling Guide*.

STEP 2. SETTING THE LIGHTBAR TO ADVANCED MODE

1. From the main guidance screen, press ▼ one or more times until you select the 🔧 icon and then press ⓄⓀ. The *Configuration* screen appears.
2. Select *User Mode* and then press ⓄⓀ. The *User Mode* screen appears.
3. Select *Advanced* and then press ⓄⓀ. The main guidance screen reappears in Advanced mode.

STEP 3. CONFIGURING THE BOOM

1. From the main guidance screen, select the 🔧 icon and then press ⓄⓀ. The *Configuration* screen appears.
2. Select *Application Control* and then press ⓄⓀ. The *Application Control* screen appears.
3. Select *Boom Setup* and then press ⓄⓀ. The *Boom Setup* screen appears.
4. Configure the following settings:

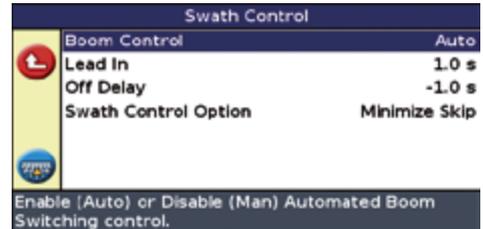| Setting	Description
Fence Nozzles	Fence nozzles are spray sections at the far end of the boom that point out to the sides to cover any fence lines. On the EZ-Boom controller, Switch 1 controls the left fence nozzle, and the first switch after the boom section switches controls the right nozzle. Fence nozzles are always manually controlled. They must be activated with the corresponding switch. With two fence nozzles, the system supports up to eight boom sections. You can disable both fence nozzles, enable either the left or right fence nozzle, or enable both.
Number Of Sections	Enter the number of boom sections on your spray boom (not counting fence nozzles). You can select up to 10 boom sections, or up to eight if you have both fence nozzles enabled.
Section Widths	Set each section width. The system sets the default widths. They are calculated by dividing the Implement Width value by the Number Of Sections value. Adjust each section width in order as necessary. As you adjust each section width, the later section widths adjust so the specified implement width is maintained. Section 1 is the section that is the furthest to the left when you stand behind the vehicle. On the EZ-Boom controller, the switch that is furthest to the left controls section 1.

Note: Set the implement width and overlap/skip when you create a new field.

5. Press 🔄 to exit the *Boom Setup* screen.

STEP 4. CONFIGURING AUTOMATIC BOOM SWITCHING

1. From the *Application Control* screen, select *Swath Control* and then press ⓞ𝕂. The *Swath Control* screen appears.
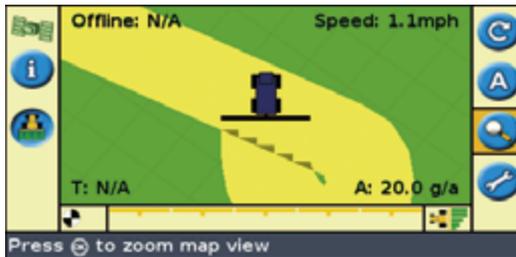

2. Configure the following settings:

Setting	Description
Boom Control	• Auto = Automatic boom control. • Manual = Manual boom switching – go to Step 3.

Boom Control = Auto

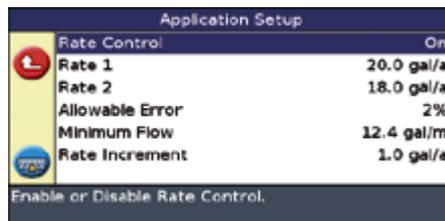| Setting	Description
Lead In	This is the number of seconds before leaving a sprayed area and entering an unsprayed area that the boom sections will turn on.
Off Delay	This is the number of seconds before or after you enter a previously sprayed area that you want the boom sections to turn off. For example, if you want the boom sections to turn off 1 second before you cross into a headland, set the *Off Delay* time to -1.0 seconds.
Swath Control Option	These settings apply when you drive onto an area that has been partially sprayed before: • Minimize Skip = Turns off spray sections when they are over any fully covered areas, so you may get some overlap. • Minimize Overlap = Turns off spray as soon as you reach any covered area, but may leave some uncovered ground.
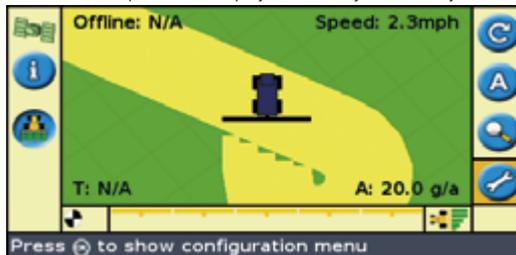
3. Press 🔙 to exit the *Swath Control* screen.

STEP 5. CONFIGURING APPLICATION

1. From the *Application Control* screen, select *Application Setup*.
   The *Application Setup* screen appears.
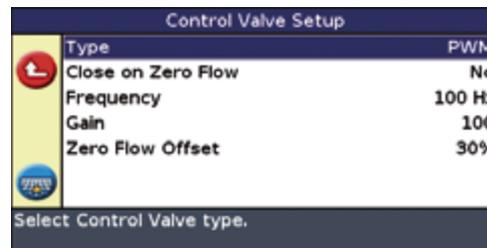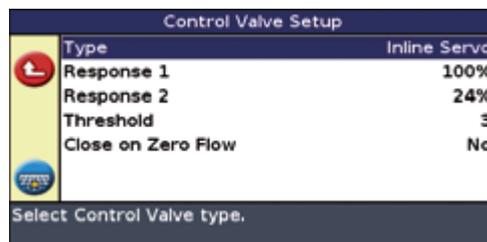
2. Configure the following options:

	Setting	Description
	Rate Control	If you want the EZ-Boom system to control boom switching only, set *Rate Control* to Off: • If you set the *Rate Control* option to Off, the *Off When Stopped* option appears. • If you set the *Rate Control* option to On, the *Rate 1*, *Rate 2*, *Allowable Error*, *Minimum Flow*, and *Rate Increment* options appear.
Off	Off When Stopped	If the vehicle is a clutch-operated planter, select No so you can continue planting even when stopped. Otherwise, select Yes.
Rate Control = On	Rate 1	This is the volume that the sprayer supplies when the Rate switch is set to 1.
	Rate 2	This is the volume that the sprayer supplies when the Rate switch is set to 2.
	Allowable Error	This is the percentage of acceptable Rate 1 or Rate 2 error before the flow control valve adjusts.
	Rate Increment	When the Rate switch is in the Rate 1 or Rate 2 position, the current application rate increases or decreases by this amount each time you press the Rate adjustment (inc/dec) switch. When the Rate switch is in the Manual position, Rate Increment does not apply. The Rate adjustment (inc/dec) switch directly activates the valve; hold the switch up to increase or down to decrease.

3. Press ⤺ to exit the *Application Setup* screen.

STEP 6. CONFIGURING THE FLOW CONTROL VALVE

1. From the *Application Control* screen, select *Control Valve Setup*. The *Control Valve Setup* screen appears.
2. Set the following settings:

|	Setting	Description
	Type	The flow control valve type: • If you select Inline Servo, Bypass Valve, or Pump Servo, the *Response 1*, *Response 2*, *Threshold*, and *Close on Zero Flow* options appear. • If you select PWM or Grounded PWM, the *Close on Zero Flow*, *Frequency*, *Gain*, and *Zero Flow Offset* options appear.
Inline/Bypass/Pump	Response 1	The desired adjustment speed of the valve when the application rate is outside the threshold.
	Response 2	The desired adjustment speed of the valve when the application rate is within the threshold.
	Threshold	The point at which the application rate is close enough to the target rate for the application speed of the valve to switch from Response 1 to Response 2.
All	Close on Zero Flow	How the valve responds when there is no flow.
PWM	Frequency	The valve's operating frequency.
	Gain	The adjustment speed of the valve.
	Zero Flow Offset	The shut-off point of the PWM valve.

3. Press ⤺ to exit the *Control Valve Setup* screen.

www.EZ-Boom.com

STEP 7. CONFIGURING THE TANK

1. From the *Application Control* screen, select *Tank Setup*. The *Tank Setup* screen appears.

2. Configure the following options:

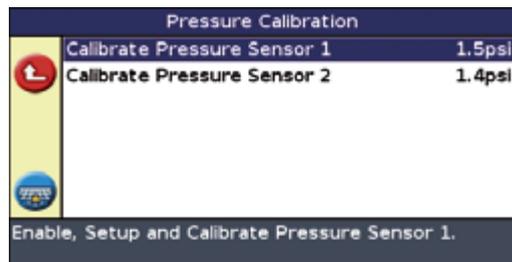| Setting	Description
Capacity	The capacity of the tank when full.
Current Volume	The amount currently in the spray tank. This amount decreases as you use the spray solution.
Low Limit	When the volume reaches this level, a warning appears.
Tank Refill Method	The method that you will use to fill the tank: • Partial Refill = If you add a specific amount of solution to the tank. (If you select *Partial Refill*, the *Partial Refill Quantity* option appears). • Refill = If you fill the tank to capacity.
Partial Refill Quantity	The amount that you add when you partially fill the tank.
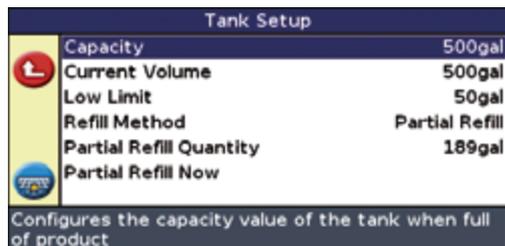
3. Press ⟲ to exit the *Tank Setup* screen.

STEP 8. CALIBRATING THE PRESSURE

If your sprayer has a pressure transducer fitted, you can use it to display pressure information on the EZ-Boom information tab. To calibrate the pressure, ensure that the transducer is connected to the correct input on the EZ-Boom system (refer to the EZ-Boom system pinout information in the *EZ-Boom 2010 Automated Application Control System Troubleshooting Guide*) and then follow the steps below. If you want pressure information to appear on the EZ-Boom information tab and there is not already a pressure transducer on the sprayer, install one.

Note - The system operates correctly without a pressure transducer.

1. From the *Application Control* screen, select *Pressure Calibration*. The *Pressure Calibration* screen appears.

2. Select *Calibrate Pressure Sensor 1* and then press ⟨OK⟩. The *Calibration Wizard: Pressure Sensor 1* warning screen appears.

3. Press ▼ as you read through the screen and then press ⟨OK⟩. The *Pressure Sensor State* screen appears.

4. Configure the following settings:

	Setting	Description
	Pressure Sensor State	Off = There is not a pressure sensor – go to Step 8. On = There is a pressure sensor.
On	Slope	The relationship between pressure and the output of the sensor. Slope is measured in mV/kPa or mV/psi.
	Set Point	The actual pressure at the time of calibration. This is usually established from your sprayer's pressure gauge.

5. Select *Calibrate Now* and then press ⟨OK⟩. The *Pressure Sensor 1 Calibration Status* screen appears.

6. Press ▼ as you read through the screen and then press ⟨OK⟩. The *Slope* and *Set Point* values are sent to the EZ-Boom controller. The *Pressure Calibration* screen reappears. The first pressure sensor is calibrated. If the sprayer has a second pressure sensor, select *Calibrate Pressure Sensor 2* and then repeat steps 3 through 5 above.

7. After calibrating, ensure that the pressure values are correct. If the sprayer has a pressure gauge fitted, use it to verify that the calibration is correct and that the EZ-Boom information tab shows the correct pressure when spraying.

8. Press ⟲ to exit the *Pressure Calibration* screen.

STEP 9. CALIBRATING THE FLOW METER

1. From the *Application Control* screen, select *Flow Calibration Wizard*. The *Flow Calibration* warning screen appears.

2. Read the information screens and then press OK. The *Flow Calibration Parameters* screen appears.

3. Select *Flow Meter Calibration* and then press OK. The *Flow Meter Calibration* screen appears.
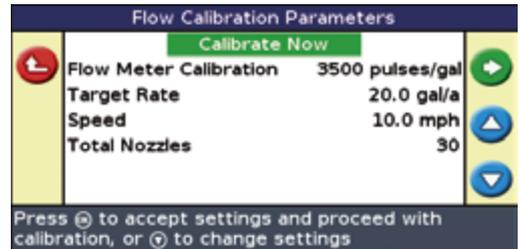
4. Enter the flow meter calibration number. You can find the number on the flow meter, or by contacting the flow meter manufacturer. The number you enter will be either pulses per gallon (US) or pulses per litre (metric).

   For a Raven flow meter, enter the calibration number as it is written on the tag. For other brands of flow meter, add a 0 to the number when you enter it (for example, if the number is 75, enter 750).

5. Do one of the following:

   – To exit the screen and use the flow meter calibration number, press ↶. The system is now configured.

   – To fine tune the calibration, adjust the following settings:

Setting	Description
Target Rate	Set the expected application rate.
Speed	Set the expected vehicle speed.
Total Nozzles	Specify the number of boom nozzles that will be turned on during the calibration. Do not count the fence nozzles.

Note - Turn on all the boom nozzles (but not the fence nozzles), and make sure that they are operational.

6. Select *Calibrate Now* and then press OK. The *Flow Calibration* screen appears.

7. Read the information and then press OK. The flow begins.

8. Perform the calibration:
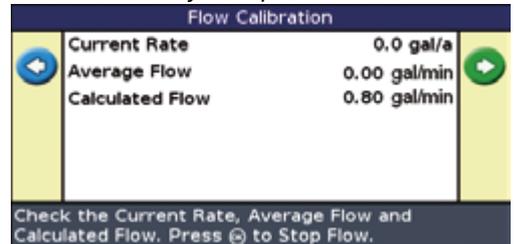
   a. Measure the volume from 3 nozzles separately for a total of 1 minute.

   b. Press OK to stop the flow.

   c. Calculate the volume per minute per nozzle of your sprayer. To do this, divide the total volume measured by the number of nozzles that you took measurements from.

   d. In the *Measured Flow* field, set the actual volume that you calculated in Step 8c. The system calculates the difference between the measured flow/nozzle and the averaged flow/nozzle. The *Calibration Complete* screen appears. The flowmeter calibration is adjusted.

   e. Press OK. The *Application Control* screen reappears.

9. Press ↶ to exit. The system is now configured.

For more information, refer to the *EZ-Boom 2010 Automated Application Control System Getting Started Guide*.

LIGHTBAR INFORMATION

To view diagnostics information, select *Configuration / Status / Fault history / EZ-Boom Fault History* and *Configuration / Application Control / About EZ-Boom*. This information may be useful for troubleshooting or if you need support help.

Note: Listed faults are not necessarily still active.

P/N 72100-83-ENG

ZTN 72100-83-ENG