

# Troubleshooting Guide

## **AgGPS® EZ-Boom® 2010 System**

Version 2.00  
Revision A  
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# Safety Information

## In this chapter:

- [Configuring vehicles with solenoid boom valves for use with the EZ-Boom 2010 System](#)

Always follow the instructions that accompany a Caution. The information it provides is intended to minimize the risk of personal injury and/or damage to property.



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**CAUTION** – This alert warns of a hazard or unsafe practice which, if not avoided, can cause injury or damage.

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*Note* – An absence of specific alerts does not mean that there are no safety risks involved.

## Configuring vehicles with solenoid boom valves for use with the EZ-Boom 2010 System

For vehicles equipped with three-wire motorized boom valves, the EZ-Boom® 2010 system controller is rated to drive all ten (10) boom sections.

For vehicles with solenoid boom valves, you may need to modify the vehicle, or the vehicle configuration, to ensure that the total current draw does not exceed 16 Amps.



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**CAUTION** – Before using solenoid boom valves, calculate the maximum total current draw. Do not allow the total to exceed 16 Amps. A higher current draw can cause the EZ-Boom controller to overheat and malfunction. To keep below the 16 Amp limit, modify your vehicle setup or configuration.

---

### Calculating the maximum total current draw

1. Find the maximum current draw for one of the solenoid boom valves. If there is no rating in the manufacturer's documentation, contact the vendor.
2. Multiply the maximum current draw for one valve by the total number of solenoid boom valves on the vehicle. For example, if one valve has a maximum current draw of 3 Amps:

This many boom valves...	Would result in a total maximum current draw of...
5	5 x 3 Amp = 15 Amp
9	9 x 3 Amp = 27 Amp

### Reducing the maximum total current draw

If the total current draw is greater than 16 Amps, do one of the following:

- Use fewer boom valves on the vehicle.
- Add external relays to each of the solenoid valves to reduce the current draw from the EZ-Boom system.
- Replace solenoid valves with three-wire motorized boom valves.

# EZ-Boom 2010 System Error Messages

## In this chapter:

- LED errors
- Viewing error messages
- Clearing the error log
- EZ-Boom system error messages

This chapter describes the controller LED states and system error messages from the EZ-Boom 2010 automated application control system. It then explains how to correct the errors.

## LED errors

The status LED on the EZ-Boom 2010 controller indicates the current operating state.



It does this by displaying different colors and flash patterns:

LED state	Description
Off	No power
Steady green	Normal operation
Flashing 1 Hz yellow	CAN bus errors detected (error active/passive state)
Steady yellow	CAN bus off
Steady red	Hardware or initialization failure
Flashing 1 Hz red	Firmware download in process
Flashing fast red	Firmware download error

## Viewing error messages

### EZ-Guide Plus lightbar guidance system

To view error messages on the EZ-Boom 2010 system when it is connected to an EZ-Guide® Plus lightbar guidance system:

1. From the lightbar navigation screen, select .
2. Select *EZ-Boom / Fault History*.

The *EZ-Boom Faults* screen appears. The previous four error messages that the EZ-Boom 2010 system has encountered appear on the screen.



### EZ-Guide 500 lightbar

To view error messages on the EZ-Boom 2010 system when it is connected to an EZ-Guide 500 lightbar guidance system:

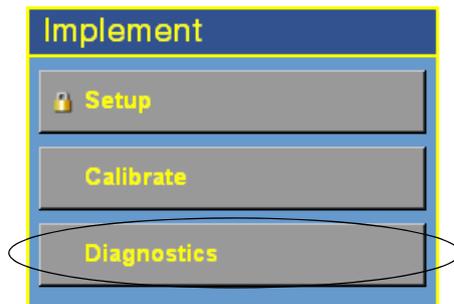
1. From the lightbar home screen, select .
2. Select *Fault History*.
3. Select *EZ-Boom Fault History*.

The *EZ-Boom Faults* screen appears.

### AgGPS FieldManager display

To view error messages on the EZ-Boom 2010 system when it is connected to an AgGPS® FieldManager™ display:

1. From the FieldManager display home screen, press the **Configuration** button. The *Configuration* screen appears.
2. Highlight the EZ-Boom plugin and then tap **Diagnostics**.



The EZ-Boom *Diagnostics* screen appears. This is the same as shown below for the FMX integrated display.

3. Tap the **View Error Log** button. The *EZ-Boom Error History* screen appears. It displays the EZ-Boom system errors.

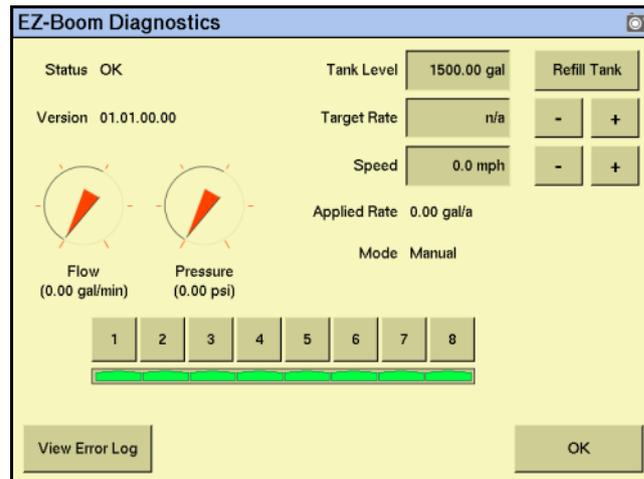
*Note* – Because this is a list of errors that have occurred, errors on the list are not necessarily still occurring.

An error message also pops up on the main navigation screen of the display when the error is encountered.

## FmX integrated display

To view error messages on the EZ-Boom 2010 system when it is connected to an AgGPS FmX™ integrated display:

1. From the *Configuration* screen, select the EZ-Boom plugin and then tap *Diagnostics*:



The *EZ-Boom Diagnostics* screen includes information on:

- current flow
- current pressure
- boom valve state
- EZ-Boom controller version number

It also shows the status of the EZ-Boom controller to ensure that it is working as expected.

2. To check that the system is responding as expected, set the *Target Rate* and *Speed* fields to a fixed known value.
3. To view previous errors, tap **View Error Log**.

## Clearing the error log

These steps apply to all systems unless otherwise specified.

### Step 1: Clear the error message

- a. Write down the error message.
- b. Check the details.
- c. Press **OK**.

### Step 2: Do one or both of the following, as directed:

- Check the current to the EZ-Boom controller. Details are given with each error message.
- Check the flow control valve setup parameters.

<b>FmX integrated display</b>	<ol style="list-style-type: none"> <li>a. On the display, press the Configuration button. The <i>Configuration</i> screen appears.</li> <li>b. Highlight the EZ-Boom plugin and then tap the <b>Setup</b> button.</li> <li>c. Make sure that the EZ-Boom system settings are correct.</li> <li>d. Highlight the Implement plugin and then tap the <b>Setup</b> button.</li> <li>e. Make sure that the Implement system settings are correct.</li> </ol>
<b>EZ-guide 500 lightbar</b>	<ol style="list-style-type: none"> <li>a. From the main navigation screen, select <b>#</b>. The <i>Configuration</i> menu appears.</li> <li>b. Select <i>Application Control</i>. The <i>Application Control</i> screen appears.</li> <li>c. Make sure that the Application system settings are correct.</li> </ol>
<b>EZ-Guide Plus lightbar</b>	<ol style="list-style-type: none"> <li>a. From the main navigation screen, select <b>#</b>. The setup menu appears.</li> <li>b. Select <i>EZ-Boom/Control Valve</i>. The <i>Ctrl. Valve Setup</i> screen appears.</li> <li>c. Check through the flow control valve settings, to ensure that they are correct.</li> </ol>
<b>FieldManager display</b>	<ol style="list-style-type: none"> <li>a. On the display, press the Configuration button. The <i>Configuration</i> screen appears.</li> <li>b. Highlight the EZ-Boom plugin and then tap the <b>Setup</b> button.</li> <li>c. Make sure that the EZ-Boom system settings are correct.</li> <li>d. Highlight the Implement plugin and then tap the <b>Setup</b> button.</li> <li>e. Make sure that the Implement system settings are correct.</li> </ol>

### Step 3: Check that pin 3 and pin 1 share a grounding point

Check that pin 3 on the CAN connector and pin 1 on the 16-pin main connector are both connected to the same electrical ground point:

- a. Attach a multimeter to pin 3 on the CAN connector harness and pin 1 on the 16-pin main connector harness.
- b. Measure the resistance. The resistance should be  $< 0.3$  ohms.

## The EZ-Boom icon does not appear on the lightbar

### Cause

There are several factors that can cause this issue. To resolve it, see the following sections:

- [CAN bus communication error](#)
- [Wrong firmware version](#)
- [Wrong configuration](#)

### Solution

#### CAN bus communication error

When the EZ-Boom 2010 system and the EZ-Guide Plus lightbar are communicating correctly, the EZ Boom status light is solid green. If the light is anything else, check the wiring and all of the connectors between the EZ-Boom 2010 system and the lightbar.

Status light condition	Description
Off	No power to the EZ-Boom 2010 system.
Steady green	Normal operation
Steady yellow	The CAN bus is off. There is no communication between the EZ-Boom 2010 system and the lightbar. Check power on the lightbar, and check the cabling between the lightbar and the EZ-Boom 2010 system.
Flashing yellow (once per second)	CAN bus error. There is a communication error between the EZ-Boom 2010 system and the lightbar. Turn off the EZ-Boom controller and the lightbar and then turn them on again. Verify that the EZ-Boom controller and the lightbar have the latest firmware version installed.
Steady red	There is a hardware or initialization failure. The EZ-Boom 2010 system has started up incorrectly and may have a hardware problem. Turn off the EZ-Boom 2010 system and the lightbar and then turn them on again. Verify that the EZ-Boom controller and the lightbar have the latest firmware version installed. If this does not resolve the issue, try another EZ-Boom controller.
Flashing red (once per second)	Firmware download is in progress. Firmware or software is being downloaded to the EZ-Boom controller. This is a normal operation and may take several minutes to complete.
Flashing red (faster than once per second)	Firmware download error: An error has occurred while downloading firmware to the EZ-Boom controller. Restart the firmware download.

#### Wrong firmware version

Check which version of firmware is installed on the EZ-Guide Plus lightbar:

1. From the main guidance screen, select *Configuration*.
2. Select *About*.

3. The *Ver* field shows the current firmware version. Do one of the following:
  - If the firmware **is not** version 4.00 or later, download the latest firmware and the EZ-Toolbox™ software onto your computer from [www.EZ-Guide.com](http://www.EZ-Guide.com).
  - If the firmware **is** the latest version, restore the lightbar defaults.

To restore defaults:

1. From the main screen, select the Configuration icon  and then press **OK**.
2. Select *Defaults*.
3. Select *Restore Defaults*.

If this does not resolve the issue, use the EZ-Toolbox software to reinstall the firmware on the lightbar:

1. Turn off the lightbar.
2. Start the EZ-Toolbox software on your computer.
3. Select the *EZ-Guide+* tab.
4. If the current firmware version does not appear in the *Select firmware* file field, select the drop down menu arrow to view all available firmware versions. If the current firmware is not in this list, click **Browse**, navigate to the folder where you saved the downloaded file, highlight the folder and then click **OK**.
5. Click **Proceed** in the top right corner of the EZ-Toolbox screen and then follow the instructions in the *Status messages* field.

### Wrong configuration

Set the Path Display for the EZ-Boom 2010 system:

1. From the main guidance screen, press *Configuration*.
2. Select *Lightbar / Display Config*.
3. Set the *Path Display* field to *EZ-Boom* and then press **OK**.

If this does not resolve the issue, restore the lightbar default settings. See above.

If restoring the defaults does not resolve the issue, use the EZ-Toolbox software to reinstall the firmware on the lightbar. See above.

## CAN communication issue when using cable P/N 62063

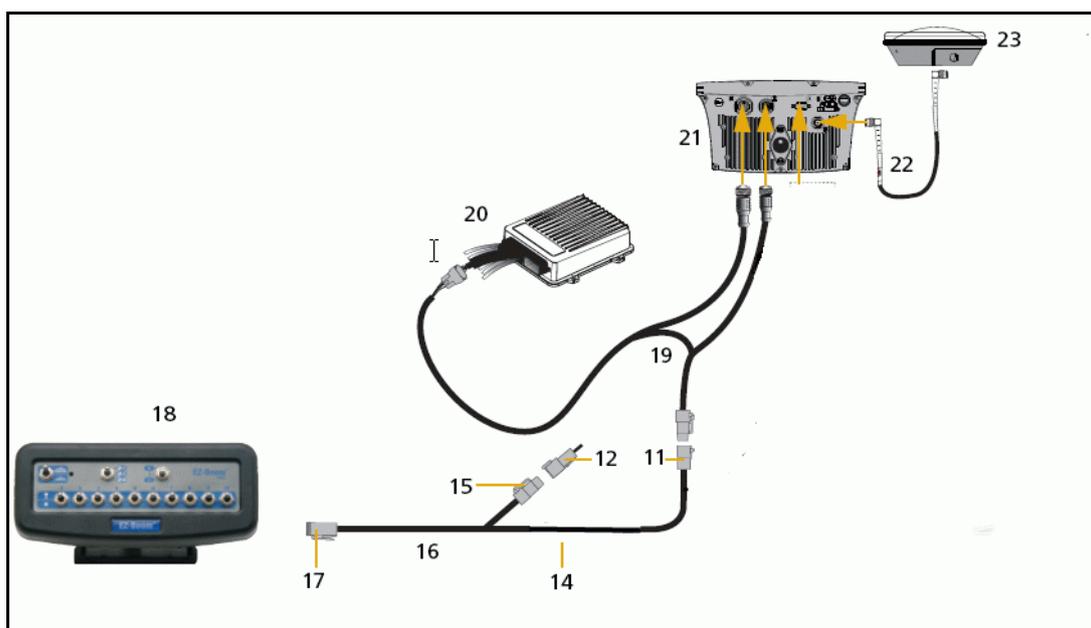
### Cause

When you use cable P/N 62063 to connect an EZ-Boom system to an EZ-Guide 500 lightbar with an Autopilot™ system, there is no CAN communication with the EZ-Boom system. This is because the CAN HI and CAN LO on cable P/N 62063 have been swapped or there is not a CAN terminator connected to the EZ-Boom cable.

To identify whether there is CAN communication, check the color of the LED on the EZ-Boom controller. If the LED lights up orange, there is no CAN communication: if the LED lights up green, CAN communication has been established.

### Solution

Replace cable P/N 62063 with the new cable configuration shown below.



Item	Description	P/N
11	S5 connector	
12	CAN terminator	59783
14	S3 connector	
15	P1 connector	
16	EZ-Boom cable	61437
17	P3 connector	
18	EZ-Boom controller	
19	Autopilot to EZ-Guide 500 cable	62063
20	AgGPS Autopilot controller	66100-xx / 66200-xxtr>
21	EZ-Guide 500 lightbar	50449

<b>Item</b>	<b>Description</b>	<b>P/N</b>
22	GPS antenna cable	
23	GPS antenna	57200-00

## EZ-Boom system error message 4500: "Setup Invalid"

### Cause

A critical EZ-Boom system error has occurred. This message appears at start-up and every time the setup process is ended, if the configuration is invalid.

### Possible failure modes

- One or more of the setup parameters are invalid.

*Note – If this is only an occasional problem, use the display to clear the controller error and continue to operate.*

### Solution

#### STEP 1: Clear the error message (page 13)

#### STEP 2: Check all setup parameters

<b>FmX integrated display</b>	<ol style="list-style-type: none"> <li>On the display, press the <b>Configuration</b> button. The <i>Configuration</i> screen appears.</li> <li>Highlight the EZ-Boom plugin and then tap <b>Setup</b>.</li> <li>Make sure that the EZ-Boom system settings are correct.</li> <li>Highlight the Implement plugin and then tap <b>Setup</b>.</li> <li>Make sure that the Implement system settings are correct.</li> </ol>
<b>EZ-guide 500 lightbar</b>	<ol style="list-style-type: none"> <li>From the main navigation screen, select "wrench icon". The configuration menu appears.</li> <li>Select Application Control. The <i>Application Control</i> screen appears.</li> <li>Make sure that the Application system settings are correct.</li> </ol>
<b>EZ-Guide Plus lightbar</b>	<ol style="list-style-type: none"> <li>From the main navigation screen, select . The <i>Setup</i> menu appears.</li> <li>Select <i>EZ-Boom</i>. The <i>EZ-Boom</i> screen appears.</li> <li>Make sure that the EZ-Boom system settings are correct.</li> </ol>
<b>FieldManager display</b>	<ol style="list-style-type: none"> <li>On the display, press the <b>Configuration</b> button. The <i>Configuration</i> screen appears.</li> <li>Highlight the EZ-Boom plugin and then tap <b>Setup</b>.</li> <li>Make sure that the EZ-Boom system settings are correct.</li> <li>Highlight the Implement plugin and then tap <b>Setup</b>.</li> <li>Make sure that the Implement system settings are correct.</li> </ol>

## EZ-Boom system error message 4600: "Rate Not Responding"

### Cause

A critical EZ-Boom system error has occurred. The difference between the actual flow and the target flow has been greater than 30% for at least 6 seconds. This message appears when the error first occurs and every second of continuous error after that until it is corrected.

### Possible failure modes

- The flow meter calibration number is incorrect.
- The target rate is outside the operating range of the spray nozzles.
- The target rate is outside the operating range of the solution pump.
- The target rate cannot be maintained because the sprayer speed is too low or too high.
- The flow control valve setup is incorrect.

*Note – If this is only an occasional problem, use the display to clear the controller error and continue to operate.*

### Solution

#### STEP 1: Clear the error message (page 13)

#### STEP 2: Check the following setup parameters

- a. Do a catch test to confirm that the flowmeter calibration number is correct.
- b. Check that the flow control valve setup is correct.



**Tip** – If your sprayer has a bypass servo, check that there is no crossover cable connected to the flow control valve. On Raven systems, this cable is required to allow the Raven flow controller to correctly adjust the valve. On an EZ-Boom system, this cable is not required. If a crossover cable is not fitted but the EZ-Boom system cannot properly control a bypass flow control valve, try changing the control valve setup to Inline Servo.

- c. Check that the target rate is within the operating parameters of the spray nozzles at your spraying speed.



**Tip** – Refer to your spray nozzle selection chart for information relating to flow and speed.

If necessary, do one of the following:

- change the spray nozzles
- adjust your target rate and/or speed to match the target rate to the sprayer nozzles

- d. Check that the solution pump is able to deliver the correct flow for your specified target rate. If necessary, change the spray nozzles or adjust your target rate and/or speed to bring the required flow to within the capabilities of the solution pump.

**Step 3: Check the strainers**

Check that the strainers on the sprayer are not blocked.

## EZ-Boom system error message xx01: "Boom Over Current"

### Cause

A critical EZ-Boom system error has occurred. The boom is turned on and the current feedback is greater than 5.3 A. This message appears when the error first occurs and every 10 seconds of continuous error after that until it is corrected.

### Possible failure modes

- There is a faulty boom valve.

*Note* – *If this is only an occasional problem, use the display to clear the controller error and continue to operate.*

### Solution

#### Step 1: Clear the error message (page 13)

#### Step 2: Check the current to the EZ-Boom controller

- With a multimeter, check the current to the specified test pin of the 16-pin connector on the EZ-Boom controller while the associated boom section is turned on. For example, when diagnosing Error Message 4701, supply power to pin 16, and Ground to pin 1 and then hook a multi-meter into the circuit on pin 6.
- If the current is greater than 5.3 A, check the vehicle wiring and the boom valve.

Error number	Boom section	Test pin
4701	1	6
4801	2	2
4901	3	5
4A01	4	7
4B01	5	8
4C01	6	9
4D01	7	15
4E01	8	1
4F01	9	2
5001	10	3

#### Step 3: Check that pin 3 and pin 1 share a grounding point (page 13)

## EZ-Boom system error message xx02: “Boom Driver Failure”

### Cause

A critical EZ-Boom system error has occurred. The boom is turned off and the current feedback is greater than approximately 2.0 A. This message appears when the error first occurs and every 10 seconds of continuous error after that until it is corrected.

### Possible failure modes

- There is a faulty boom valve or wiring harness.

*Note – If this is only an occasional problem, use the display to clear the controller error and continue to operate.*

### Solution

#### STEP 1: Clear the error message([page 13](#))

#### STEP 2: Check the current to the EZ-Boom controller

- With a multimeter, check the current to the specified test pin of the 16-pin connector on the EZ-Boom controller while the associated boom section is turned on. For example, when diagnosing Error Message 4702, supply power to pin 16, and Ground to pin 1 and then hook a multi-meter into the circuit on pin 6.
- If the current is greater than 2.0 A, check the vehicle wiring and the boom valve.

Error number	Boom section	Test pin
4702	1	6
4802	2	2
4902	3	5
4A02	4	7
4B02	5	8
4C02	6	9
4D02	7	15
4E02	8	1
4F02	9	2
5002	10	3

#### STEP 3: Check that pin 3 and pin 1 share a grounding point ([page 13](#))

## EZ-Boom system error message 5101: “Flow Valve Over Current”

### Cause

A critical EZ-Boom system error has occurred. When the valve is being adjusted, the current feedback is greater than approximately 4.0 A. This message appears when the error first occurs and every 10 seconds of continuous error after that until it is corrected.

### Possible failure modes

- There is a faulty control valve or wiring harness.

*Note – If this is only an occasional problem, use the display to clear the controller error and continue to operate.*

### Solution

**STEP 1: Clear the error message (page 13)**

**STEP 2: Check the flow control valve setup parameters (page 13)**

**STEP 3: Check the current to the EZ-Boom controller**

- a. With a multimeter, check the current to pins 3 and 4 of the 16-pin connector on the EZ-Boom controller while the valve is being adjusted.  
If checking at the EZ-Boom controller, supply power to pin 16 and Ground to pin 1.
- b. If the current is greater than approximately 4.0 A, check the vehicle wiring and the control valve.

## EZ-Boom system error message 5102: “Flow Valve Driver Failure”

### Cause

A critical EZ-Boom system error has occurred. The valve is not being adjusted and the current feedback is greater than approximately 2.0 A. This message appears when the error first occurs and every 10 seconds of continuous error after that until it is corrected.

### Possible failure modes

- There is a faulty flow control valve or wiring harness.

*Note – If this is only an occasional problem, use the display to clear the controller error and continue to operate.*

### Solution

#### **STEP 1: Clear the error message (page 13)**

#### **STEP 2: Check the flow control valve setup parameters (page 13)**

#### **STEP 3: Check the current to the EZ-Boom controller**

- a. With a multimeter, check the current to pins 3 and 4 of the 16-pin connector on the EZ-Boom controller while the valve is *not* being adjusted.
- b. If the current is greater than approximately 2.0 A, check the vehicle wiring and the flow control valve.

## EZ-Boom system error message 5103: “Flow Valve Open”

### Cause

A critical EZ-Boom system error has occurred. There are two possible causes of this error code:

- The driver part has a digital status feedback. The error is triggered when the status indicates an error opening or closing.
- A count is kept for the digital status feedback of the driver part. When normal operation occurs, the count decreases by 1. When an error occurs, the count increases by 1. If the error count reaches 50, the device enters an error state and the valve is no longer adjusted.

This message appears when the error first occurs and every 10 seconds of continuous error after that until it is corrected.

### Possible failure modes

- There is a faulty flow control valve or wiring harness.

*Note* – If this is only an occasional problem, use the display to clear the controller error and continue to operate.

### Solution

**STEP 1: Clear the error message (page 13)**

**STEP 2: Check the flow control valve setup parameters (page 13)**

**STEP 3: Turn the controller off and on again**

If the error count has reached 50 and the device has entered a error state:

- a. Turn the controller off.
- b. Wait for 5 seconds.
- c. Turn the controller on again. This will reset the error count to 0.

## EZ-Boom system error message 5201: “Main Pressure Below Min”

### Cause

A critical EZ-Boom system error has occurred. There are two possible causes of this error message:

- The pressure is lower than -70 kPa.
- A pressure indication of < 0 psi occurred for a period of at least three seconds.

This message appears when the error first occurs and every 10 seconds of continuous error after that until it is corrected.

*Note – This error will only occur if the pressure sensor is enabled in the EZ-Boom system setup.*

### Possible failure modes

- There is a faulty pressure sensor or wiring harness.
- The pressure sensor is not calibrated correctly.

*Note – If this is only an occasional problem, use the display to clear the controller error and continue to operate.*

### Solution

#### STEP 1: Clear the error message([page 13](#))

#### STEP 2: Check the pressure setup parameters

<b>FmX integrated display</b>	<ol style="list-style-type: none"> <li>On the display, press the <b>Configuration</b> button. The <i>Configuration</i> screen appears.</li> <li>Select the EZ-Boom plugin and then tap <b>Calibrate</b>.</li> <li>Select <i>Pressure Calibration</i> and then tap <b>Start</b>.</li> <li>Check that the pressure sensor is enabled and that the valve settings are correct.</li> <li>If necessary, re-calibrate the sensor.</li> </ol>
<b>EZ-guide 500 lightbar</b>	<ol style="list-style-type: none"> <li>On the display select the wrench icon. The <i>Configuration</i> screen appears.</li> <li>Select <i>Application Control</i>, select <i>Pressure Calibration</i> and then select <i>Calibrate Pressure Sensor</i>.</li> <li>Set Pressure Sensor State to On.</li> <li>Ensure that the Slope value is correct and that the Set point matches the charged system pressure gauge.</li> </ol>

<p><b>EZ-Guide Plus lightbar</b></p>	<ol style="list-style-type: none"> <li>a. From the main navigation screen, select <i>f</i>. The setup menu appears.</li> <li>b. Select <i>EZ-Boom/Pressure Cal</i>. The <i>Pressure Cal</i> screen appears.</li> <li>c. Ensure that the sensor is enabled and the settings are correct.</li> <li>d. If necessary, re-calibrate the sensor.</li> </ol>
<p><b>FieldManager display</b></p>	<ol style="list-style-type: none"> <li>a. On the display, press the <b>Configuration</b> button. The <i>Configuration</i> screen appears.</li> <li>b. Select the EZ-Boom plugin and then tap <b>Calibrate</b>.</li> <li>c. Select <i>Pressure Calibration</i> and then tap <b>Start</b>.</li> <li>d. Check that the pressure sensor is enabled and that the valve settings are correct.</li> <li>e. If necessary, re-calibrate the sensor.</li> </ol>

**Step 3: Check the wiring harness and the pressure sensor output**

- a. Check that the sensor is receiving 12 VDC from the EZ-Boom controller.
- b. Check that the sensor is outputting 1 V–5 V.

## EZ-Boom system error message 5202: “Main Pressure Above Max”

### Cause

A critical EZ-Boom system error has occurred. There are two possible causes of this error message:

- The pressure is lower than -70 kPa.
- The input voltage is greater than approximately 4.95 V for 3 seconds continuously.

This message appears when the error first occurs and every 10 seconds of continuous error after that until it is corrected.

*Note – This fault will only appear if the pressure sensor is enabled in the EZ-Boom system setup.*

### Possible failure modes

- There is a faulty pressure sensor or wiring harness.
- The pressure sensor is not calibrated correctly.

*Note – If this is only an occasional problem, use the display to clear the controller error and continue to operate.*

### Solution

#### STEP 1: Clear the error message(page 13)

#### STEP 2: Check the pressure setup parameters

<b>FmX integrated display</b>	<ol style="list-style-type: none"> <li>On the display, press the <b>Configuration</b> button. The <i>Configuration</i> screen appears.</li> <li>Select the EZ-Boom plugin and then tap <i>Calibrate</i>.</li> <li>Select <i>Pressure Calibration</i> and then tap <b>Start</b>.</li> <li>Check that the pressure sensor is enabled and that the valve settings are correct.</li> <li>If necessary, re-calibrate the sensor.</li> </ol>
<b>EZ-guide 500 lightbar</b>	<ol style="list-style-type: none"> <li>On the display select the wrench icon. The <i>Configuration</i> screen appears.</li> <li>Select <i>Application Control</i>, select <i>Pressure Calibration</i> and then select <i>Calibrate Pressure Sensor</i>.</li> <li>Set Pressure Sensor State to On.</li> <li>Ensure that the Slope value is correct and that the Set point matches the charged system pressure gauge.</li> </ol>

<p><b>EZ-Guide Plus lightbar</b></p>	<ol style="list-style-type: none"> <li>a. From the main navigation screen, select <i>f</i>. The setup menu appears.</li> <li>b. Select <i>EZ-Boom/Pressure Cal</i>. The <i>Pressure Cal</i> screen appears.</li> <li>c. Ensure that the sensor is enabled and the settings are correct.</li> <li>d. If necessary, re-calibrate the sensor.</li> </ol>
<p><b>FieldManager display</b></p>	<ol style="list-style-type: none"> <li>a. On the display, press the <b>Configuration</b> button. The <i>Configuration</i> screen appears.</li> <li>b. Select the EZ-Boom plugin and then tap <i>Calibrate</i>.</li> <li>c. Select <i>Pressure Calibration</i> and then tap <b>Start</b>.</li> <li>d. Check that the pressure sensor is enabled and that the valve settings are correct.</li> <li>e. If necessary, re-calibrate the sensor.</li> </ol>

**Step 3: Check the wiring harness and the pressure sensor output**

- a. Check that the sensor is receiving 12 VDC from the EZ-Boom controller.
- b. Check that the sensor is outputting 1 V–5 V.

## EZ-Boom system error message 6B00: “Minimum Flow”

### Cause

A critical EZ-Boom system error has occurred. This error message appears when the actual flow is less than the *Minimum Flow* setting (scaled for the current swath) **and** the target flow is less than the actual flow:

This message appears when the error first occurs and every second of continuous error after that until it is corrected.

### Possible failure modes

- There is a faulty flow meter or wiring harness.
- The sprayer is traveling so slowly that the target rate cannot be maintained unless the flow drops below the *Minimum Flow* setting.
- The *Minimum Flow* setting is too high.

*Note – If this is only an occasional problem, use the display to clear the controller error and continue to operate.*

### Solution

#### STEP 1: Clear the error message(page 13)

#### STEP 2: Check the Minimum Flow setting

<b>FmX integrated display</b>	<ol style="list-style-type: none"> <li>a. On the display, press the <b>Configuration</b> button. The <i>Configuration</i> screen appears.</li> <li>b. Select the EZ-Boom plugin and then tap <b>Calibrate</b>.</li> <li>c. Select <i>Flow Calibration</i> and then tap <b>Start</b>.</li> <li>d. Make sure that the value in the <i>Min Flow</i> field is appropriate (not too high).</li> </ol>
<b>EZ-guide 500 lightbar</b>	<ol style="list-style-type: none"> <li>a. On the display select the wrench icon. The <i>Configuration</i> screen appears.</li> <li>b. Select <i>Application Control</i> and then select <i>Application Setup</i>.</li> <li>c. Make sure that the value in the <i>Min Flow</i> field is appropriate (not too high).</li> </ol>
<b>EZ-Guide Plus lightbar</b>	<ol style="list-style-type: none"> <li>a. From the main navigation screen, select <b>⚙</b>. The setup menu appears.</li> <li>b. Select <i>EZ-Boom/ Application</i>. The <i>Application Setup</i> screen appears.</li> <li>c. Ensure that the <i>Min Flow</i> setting is appropriate (not too high).</li> </ol>
<b>FieldManager display</b>	<ol style="list-style-type: none"> <li>a. On the display, press the <b>Configuration</b> button. The <i>Configuration</i> screen appears.</li> <li>b. Select the EZ-Boom plugin and then tap <b>Calibrate</b>.</li> <li>c. Select <i>Flow Calibration</i> and then tap <b>Start</b>.</li> <li>d. Make sure that the value in the <i>Min Flow</i> field is appropriate (not too high).</li> </ol>

### Step 3: Check the liquid flow

<b>FmX integrated display</b>	<ol style="list-style-type: none"> <li>Check the output from the flow meter when liquid is flowing through the sprayer. To do this, perform a flow calibration:</li> <li>On the display, press the <b>Configuration</b> button. The <i>Configuration</i> screen appears.</li> <li>Select the EZ-Boom plugin and then tap <b>Calibrate</b>. The <i>Implement Calibration</i> screen appears.</li> <li>Select <i>Flow Calibration</i>. The EZ-Boom <i>Flow Calibration</i> screen appears.</li> <li>Tap the <b>Recalibrate</b> button to run the flow calibration sequence.</li> <li>Follow the onscreen instructions or refer to the <i>AgGPS FieldManager Display User Guide</i> version 2.00.</li> </ol>
<b>EZ-guide 500 lightbar</b>	<ol style="list-style-type: none"> <li>On the display, select the wrench icon. The <i>Configuration</i> screen appears.</li> <li>Select <i>Application Control</i> and then select the Flow Calibration wizard.</li> <li>Select <i>Calibrate Now</i> to begin calibration.</li> </ol>
<b>EZ-Guide Plus lightbar</b>	<p>Check the output from the flow meter when liquid is flowing through the sprayer. To do this, perform a flow calibration:</p> <ol style="list-style-type: none"> <li>From the main navigation screen, select <b>f</b>. The setup menu appears.</li> <li>Select <i>EZ-Boom/Flow Calibration</i>. The <i>Flow Calibration</i> screen appears.</li> <li>Press <b>OK</b> until you have selected Calibrate.</li> <li>Press <b>OK</b> to run the flow calibration sequence.</li> </ol>
<b>FieldManager display</b>	<ol style="list-style-type: none"> <li>Check the output from the flow meter when liquid is flowing through the sprayer. To do this, perform a flow calibration:</li> <li>On the display, press the <b>Configuration</b> button. The <i>Configuration</i> screen appears.</li> <li>Select the EZ-Boom plugin and then tap <b>Calibrate</b>. The <i>Implement Calibration</i> screen appears.</li> <li>Select <i>Flow Calibration</i>. The EZ-Boom <i>Flow Calibration</i> screen appears.</li> <li>Tap the <b>Recalibrate</b> button to run the flow calibration sequence.</li> <li>Follow the onscreen instructions or refer to the <i>AgGPS FieldManager Display User Guide</i> version 2.00.</li> </ol>

### Step 4: Check the wiring harness and flow meter output

Check that the flow meter is being supplied the correct voltage from the EZ-Boom controller.

## Operating the Rate Increment/Decrement switch

### Description

Setting the amount by which the current application rate (Rate 1 or Rate 2) increases and decreases each time you press the Rate Adjustment (increase/decrease) switch.

### Summary

If you use the pre-selected target rates (Rate 1 or Rate 2), toggle the switch every time that you want to increase or decrease the rate. When the system is in manual mode, you can hold the switch in the upward position-the application will continue to increase automatically. Release the switch when you reach the required rate.

### Solution

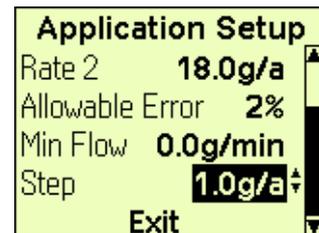
The Increment/Decrement switch depends on the setting of the Rate switch: Rate 1, Rate 2, or Manual mode.

*Note – The way that the switch works depends on the display you are using.*

#### EZ-Guide Plus lightbar: Rate 1 or Rate 2

Set the *Step* value in the *Application Setup* screen.

- To increase the flow by that step value, press the Increment/Decrement switch up.
- To decrease the flow by that step value, press the switch down.

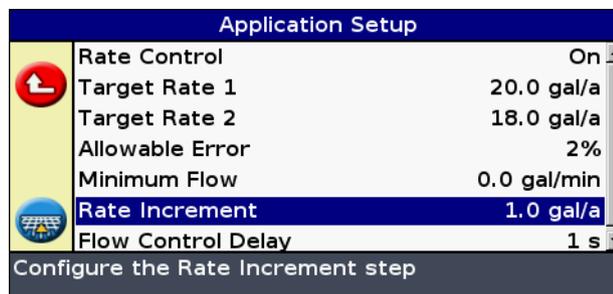


If you hold the switch up or down, the flow increases or decreases by only one step. To increase or decrease by another step, you must release the switch and then press it again.

#### EZ-Guide 500 system: Rate 1 or Rate 2

Set the *Rate Increment* value in the *Application Setup* screen.

- To increase the flow by that step value, press the Increment/Decrement switch up.
- To decrease the flow by that step value, press the switch down.



If you hold the switch up or down, the flow increases or decreases by only one step. To increase or decrease by another step, you must release the switch and then press it again.

### FieldManager display: Rate 1 or Rate 2

Set the *Rate Increment* value in the *EZ-Boom Setup* screen.



- To increase or decrease the flow by the rate increment value, enter the required value into the appropriate field.

If you hold the switch up or down, the flow increases or decreases by only one step. To increase or decrease by another step, you must release the switch and then press it again.

### Manual mode

The Increment/Decrement switch adjusts the rate control valve while you hold the switch up or down.

- When you hold the switch in the Increment position (up), the rate control valve opens until it is fully open or until you release the switch.
- When you hold the switch in the Decrement position (down), the rate control valve closes until it is fully closed or until you release the switch.

## Spray booms do not turn on in a corner

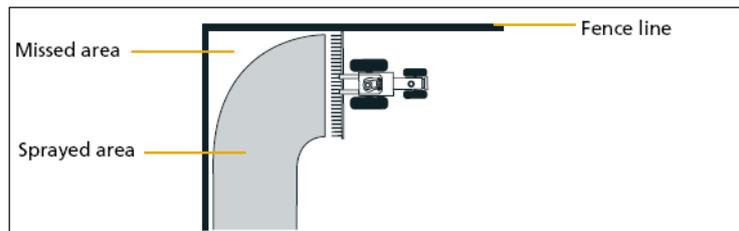
### Cause

The sprayer has no ground speed.

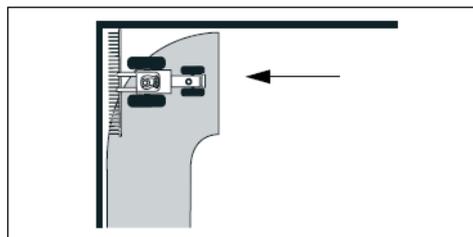
### Solution

Use the manual-rate-from-stationary mode to spray the corners of fields. This ensures maximum spray coverage of your field, while minimizing repeat coverage.

1. Drive around the corner while spraying. An area of land is missed.



2. Once you pass the corner and straighten up, stop the vehicle.
3. Use the master switch to turn off the EZ-Boom controller.
4. Reverse the vehicle until the spray boom is at the field boundary (for example, the fence).

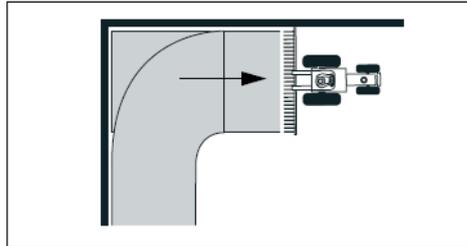


5. Adjust the EZ-Boom controller switches:
  - a. Set the rate switch to manual mode (M).
  - b. Turn on the master switch.

Because the vehicle is starting from a stationary position, automated boom switching is disabled.

**Note** – Once the boom sections are open, you may need to adjust the flow rate with the rate adjustment Inc/Dec switch.

6. Begin driving. As soon as the vehicle begins moving, set the rate switch back to one of the automated spray modes (Rate 1 or Rate 2). This re-enables automated boom switching. Any boom sections that are re-covering an area that was previously sprayed will turn off.



7. Continue driving the field as before.

## The system shuts off when GPS signal is lost

### Cause

The system no longer has a vehicle speed input, which the EZ-Boom controller needs to calculate the GPS position and the spray rate.

### Solution

To continue spraying if the GPS signal is lost, switch to manual rate control mode (the M position), which does not require vehicle speed input. However, the EZ-Boom controller cannot then calculate an automatic spray rate or adjust the spray rate if the vehicle speed increases or decreases.

For more information, see [System behavior following loss of GPS](#) below.

*Note* – When in manual mode, use the vehicle speedometer and system pressure gauges to maintain the correct spray volume.

### Rate control and the loss of GPS

To determine a spray rate, you need the following information:

- Sprayer speed (mph)
- Sprayer boom width (inches)
- Flow of spray (Gallons per minute)

### Boom control and the loss of GPS

Position information is lost when GPS is lost. Without position information, the EZ-Boom 2010 system cannot determine the location of the spray boom and so cannot detect previously-sprayed areas in order to control individual boom sections.

If the system is in the Auto Rate 1 or Auto Rate 2 mode, the loss of GPS turns off all the boom sections. Switch the rate control to manual mode to turn on the boom sections and continue to spray.

While the EZ-Boom 2010 system is without a valid GPS position, mapping or coverage logging is disabled.

### System behavior following loss of GPS

System	Behavior
EZ-Guide Plus	The system uses "dead reckoning" for five seconds; the speed and heading are assumed to remain the same. After five seconds, if the rate control is in Rate 1 or Rate 2, the EZ-Guide Plus lightbar turns off the boom sections.
EZ-Guide 500	The display immediately turns off all boom sections.
FieldManager	The display immediately turns off all boom sections.
FmX	The display immediately turns off all boom sections.

## Boom sections do not turn on

### Cause

Boom sections do not receive a signal voltage to open.

### Solution

Check the state of the boom section on the display.

LED color	The section is...
Red	Off.
Green	On. Sending power to the boom valves.
Yellow or Grey	Looking for a non-covered area. No power is supplied to the boom valves. or Looking for flow. Sending power to the boom valves. Waiting to see flow.

Check the system setting:

1. Turn off the Rate Control.
2. Set the Off When Stopped option to Yes.
3. Move the EZ-Boom rate switch to Rate 1 or Rate 2 and then to Manual.  
The system should turn boom section LEDs to green and send power to turn on the boom valves.
4. Do one of the following:
  - If the section LEDs **do not** turn green, check if there is a cable plugged into the 14-pin connector. If there is, unplug this connector and see if all sections then turn green.
  - If the section LEDs **do** turn green, look for a missing implement plug or implement switch.

## Rate not responding and Min Flow reached

### Cause

The system is at the minimum flow setting and cannot adjust the rate any lower.

### Solution

Set *Min Flow* to the lowest possible rate for the control valve and flow meter.

## Not reading any Applied Rate "With supported flow meter"

### Cause

No signal from the flow meter.

### Solution

1. Check the flow meter power, signal, and ground wiring:
  - Depending on the flow meter, the power wire may have 5 V or 12 V.
  - The signal wire should have 5 V.
  - The ground wire should show good continuity to ground "under 1 ohm".
2. Check for good continuity on the signal wire from the flow meter back to pin 13 on the harness going to the 16-pin connector on the EZ-Boom controller.
3. If the wires are satisfactory, check for a Hz reading on the EZ-Boom pin 13. You will need to back-probe the wire to do this test.
  - If there is a Hz reading, reinstall the EZ-Boom and display firmware. If that does not resolve the issue, try a different EZ-Boom controller.
  - If there is no Hz reading, try a different flow meter.

## Incorrect tank volume message

### Cause

Amount that is applied does not match tank volume.

### Possible failure modes

- The system reports that there are X number of gallons left, but the tank is empty.
- The system reports that the tank is empty but there are still X number of gallons left.

### Solution

1. Perform a catch test to make sure that the system is outputting the correct amount for the sprayer tips.
2. If the system is incorrect by a small amount, increase the Cal number slightly to output more or decrease the Cal number slightly to output less.

*Note – The tank volume markings may not be exact; change the Cal number by only a small amount because it affects how much is being sprayed.*

## Pressure stays at Set limit on Pressure sensor Cal.

### Cause

No change in voltage from the pressure sensor.

### Solution

Do one or more of the following:

- Make sure that the pressure changes at the pressure sensor.
- Make sure that the correct sensor (Aux or Main) is calibrated.
- Make sure the slope value is set correctly: 27 mV/PSI for Trimble implements.
- Check for power, ground, and signal voltage at the pressure sensor. Power goes into the pressure sensor and then the signal voltage out should change when PSI changes. Back-probe the signal wire and then vary the pressure to make sure that the signal voltage changes.
- If the signal voltage *does not* vary with pressure change, replace the pressure sensor.
- If the signal voltage *does* vary with pressure change, check continuity from the signal wire out at the pressure sensor to the 14-pin connector on the EZ-Boom controller. Main pressure sensor is pin 10; Aux pressure sensor is pin 6.
- If continuity is satisfactory, reinstall the EZ-Boom and display firmware. If that does not resolve the issue, try a different EZ-Boom controller.

## **Boom section 1 on an SPX sprayer does not turn on**

### **Cause**

There may be a diode molded in the connector on the sprayer.

### **Solution**

Check continuity on pin 6 of the 16-pin connector going into to the back of the EZ-Boom controller to the boom section 1 signal wire.

If there is a diode in the system, you see continuity with the leads one way and when you reverse them, you see an open.

In this case, use a Y-harness to jump pin 6 on the Y-harness to pin 6 on the sprayer harness.

If you see an open with the leads both ways, look for broken wiring from the EZ-Boom controller out to the number 1 boom valve.

## **“Rate not responding” message**

### **Cause**

Applied rate is unable to reach the Target Rate.

### **Possible failure modes**

Message appears when speeding up or slowing down.

### **Solution**

1. Check the following:
  - The tips in use
  - Tip spacing
  - Required target rate
  - Require running speed
2. Check the sprayer tip chart to make sure that the tips can run that speed.
3. Do one of the following:
  - If the tips cannot run at that speed, change the tips.
  - If the tips can output the required rate at that speed but the message still appears, perform a catch test to double-check the flow calibration number.

## Rate fluctuates around the Target Rate.

### Cause

The control valve is either responding too quickly and overshooting the target rate, or moving too slowly and drifting away from the target rate.

### Possible failure modes

Incorrect settings for Response 1, Response 2, or Threshold.

### Solution

Do one of the following:

- If the EZ-Boom system is not controlling rate, check and adjust as necessary the other rate controller settings.
- If the EZ-Boom system is controlling rate, check and adjust as necessary the Response 1, Response 2, and Threshold values.
  - Response 1 shows the response speed for the control valve once the Target rate goes beyond the threshold value.
  - Response 2 shows the response speed for the control valve when within the threshold.
  - Threshold shows the distance allowed from the Target rate before switching from Response 2 to Response 1.

For a faster control valve response speed, set a higher number.

For a slower response speed, set a lower number.

*Note – Trimble does not average the application rate so there will be more fluctuations.*

## Flow Control Valve Error Driver Failure (-1 mA) Fault

### Cause

Probably a poor electrical system ground.

### Solution

Do one or more of the following:

- Check the EZ-Boom ground wiring. Jump a separate ground wire into pin 1 of the 16-pin connector on the back of the EZ-Boom controller.
- Check that the continuity of the cabling from the EZ-Boom controller to the control valve is less than 1 ohm.
- Repeat the tests on another EZ-Boom controller and/or control valve.

## Control Valve in headland fault

### Cause

The control valve shuts completely when *Close on zero flow* is set to Yes, or the master switch is turned off.

### Possible failure modes

The Control Valve closes when you enter a headland and then takes a long time to build pressure when you leave the headland.

### Solution

Do one or more of the following:

- Make sure that *Close on Zero Flow* is set to *No*.
- Make sure that the master switch stays turned on and is not turned off when you enter a headland.
- If there is section overlap when you go into or come out of the headland, the flow rate may be too low for the control valve. Enter a minimum flow value to keep the valve open.

## Sections not mapping when EZ-Boom controller is controlling sections only

### Cause

*Rate control* is set to On and is looking for a flow meter signal to start mapping, but there is no flow meter signal available when doing section control.

### Possible failure modes

Section LEDs turn from red to yellow/grey on the display but do not map.

### Solution

Turn off the Rate Control.

## Boom sections do not turn off

### Cause

If either the Master switch or the Aux-Master switch is turned on, the sections stay on.

### Possible failure modes

Boom sections stay on when:

- The Master switch is turned on and then off.
- The Aux-Master switch is turned on and then off.

### Solution

- To make the Aux-Master switch control the system, turn off the EZ-Boom Master switch.
- To make the EZ-Boom Master switch control the system, turn off the Aux-Master switch.

*Note* – The Aux-Master switch supplies power into pin 10 on the EZ-Boom 16-pin connector.



# EZ-Boom 2010 System Harness Schematics

## In this chapter:

- EZ-Boom 2010 system cable pinout information
- EZ-Guide-to-EZ-Steer harness: P/N 52763
- EZ-Steer-to-EZ-Boom harness: P/N 58377
- Terminator connector: P/N 58378
- Raven 4x0 series "Y" cable: P/N 58560
- CAN terminator: P/N 59783
- AgGPS FieldManager display harness (Rev B): P/N 59872
- FieldManager-to-EZ-Boom-extension-cable: P/N 59873
- Raven 4x00 series "Y" cable: P/N 59942 (see next page)
- EZ-Boom-to-Raven-4x00 adaptor harness: P/N 59943
- Implement switch harness: P/N 60477
- Implement tee harness: P/N 60567
- Implement switch extension harness (10 ft): P/N 60478
- Raven to EZ-Boom harness: P/N 58560
- Foot pedal assembly: P/N 60490
- EZ-Boom cable John Deere 4710, 4720, 4920: P/N 61593
- Spracoupe to EZ-Boom harness: P/N 61991-00
- Flowmeter: P/N 62136
- EZ-Boom to Flexicoil adapter: P/N 64396 (1 of 2)
- EZ-Boom to Flexicoil adapter: P/N 64396 (2 of 2)
- Spracoupe to EZ-Boom adapter: P/N 64670
- Spracoupe to EZ-Boom cable: P/N 64671 (1 of 2)
- Spracoupe to EZ-Boom cable: P/N 64671 (2 of 2)
- FmX to CAN w/port replicator: P/N 67087

This chapter describes the EZ-Boom 2010 system harness schematics.

## EZ-Boom 2010 system cable pinout information

The diagram shows the back of the EZ-Boom 2010 system harness connector housing. Three callouts are present: **1** points to the main connector on the left, **2** points to the secondary connector in the middle, and **3** points to the CAN BUS connector on the right.

**1** MAIN CONNECTOR  
MATE: AMP P/N 206037-1

PIN	SIGNAL
1	GND
2	BOOM 2
3	INC/DEC (OPEN VALVE)
4	INC/DEC (CLOSE VALVE)
5	BOOM 3
6	BOOM 1
7	BOOM 4
8	BOOM 5
9	BOOM 6
10	AUX MASTER SW. INPUT
11	SHIELD GROUND
12	5VDC (OUT)
13	FLOW SIGNAL
14	SWITCHED 12V+ (OUT)
15	BOOM 7
16	BATT+

**2** SECONDARY CONNECTOR  
MATE: AMP P/N 206044-1

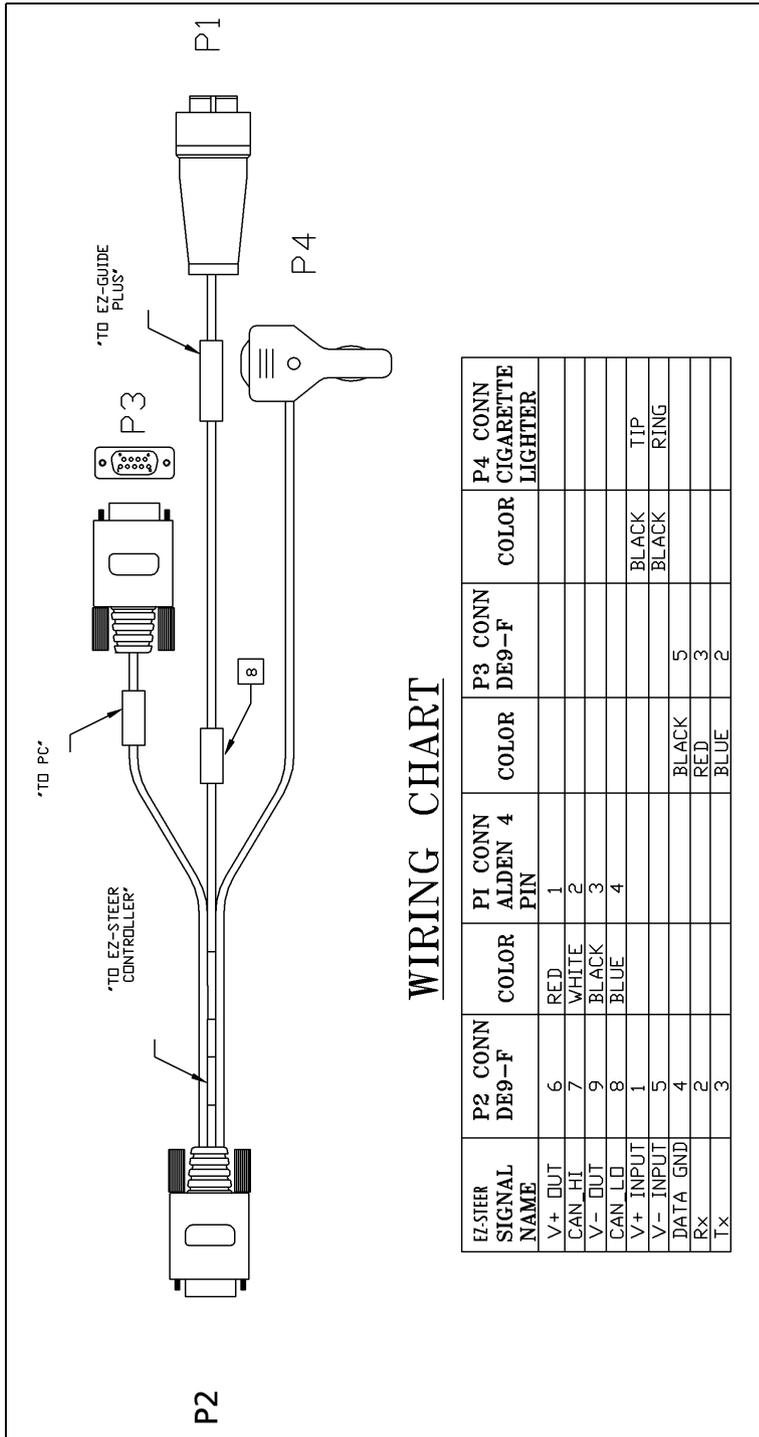
PIN	SIGNAL
1	BOOM 8
2	BOOM 9
3	BOOM 10
4	POWER (PRESSURE SENSOR 2)
5	GROUND (PRESSURE SENSOR 2)
6	PRESSURE SIGNAL
7	
8	POWER (PRESSURE SENSOR 1)
9	GROUND (PRESSURE SENSOR 1)
10	PRESSURE SIGNAL 1
11	CABLE SENSE RETURN
12	IMPLEMENT SWITCH INPUT
13	IMPLEMENT SWITCH 5V+
14	CABLE SENSE SEND

**3** CAN BUS  
MATE: DEUTSCH P/N DT06-4S-\*\*\*\*

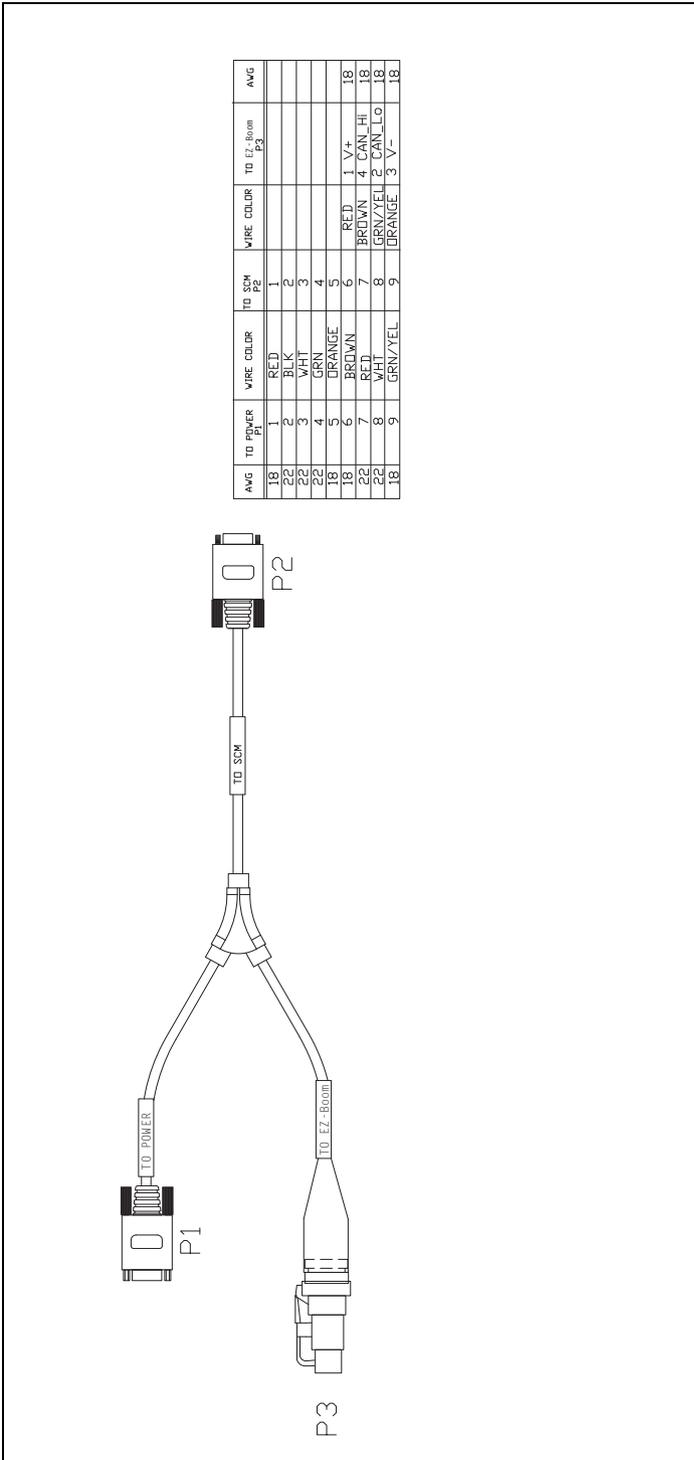
PIN	SIGNAL
1	12V+ POWER
2	CAN LOW
3	GROUND
4	CAN HIGH

## EZ-Guide-to-EZ-Steer harness: P/N 52763

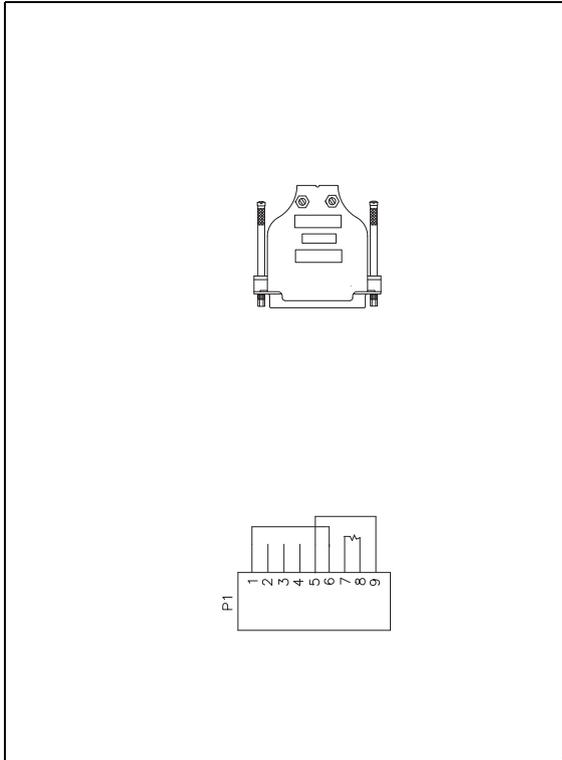
(Which connects the EZ-Guide Plus lightbar guidance system to the EZ-Steer® assisted steering system):



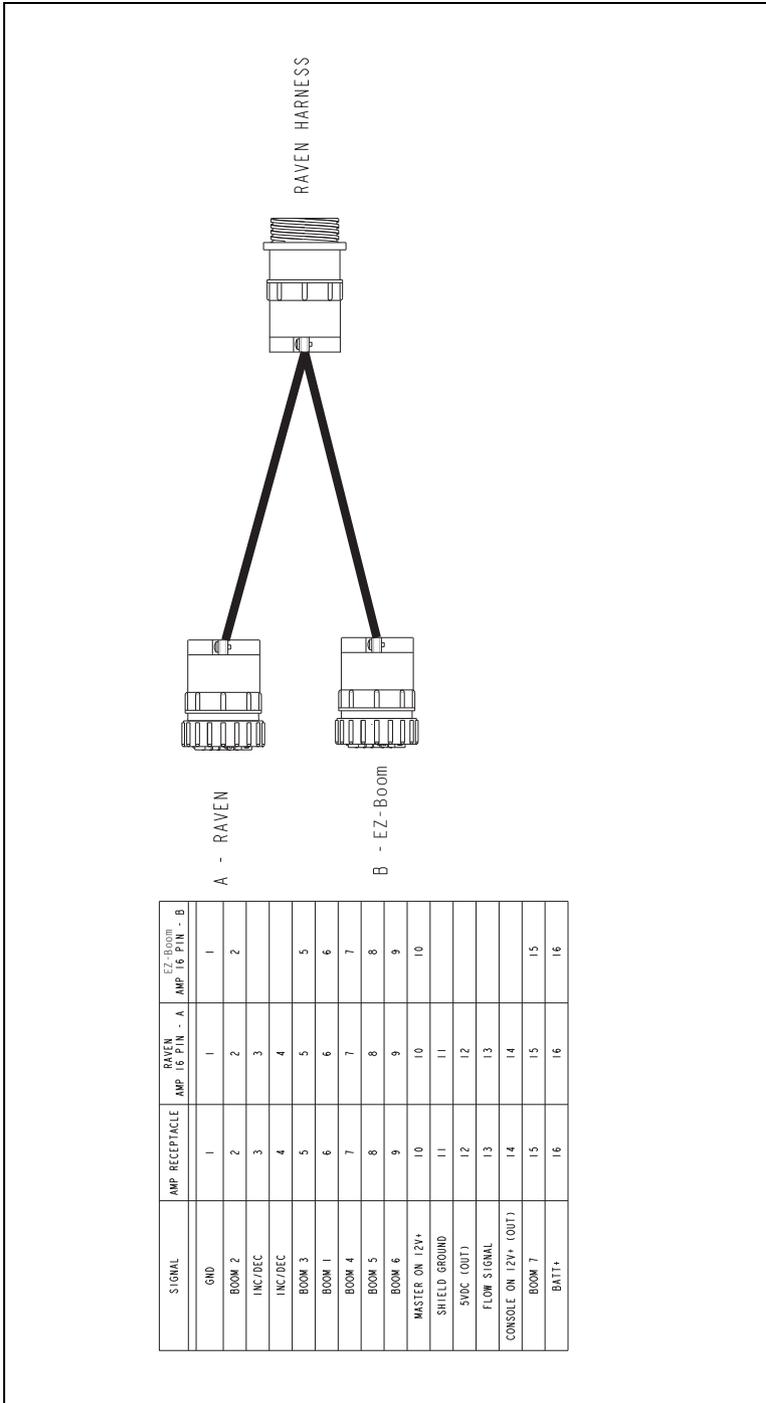
## EZ-Steer-to-EZ-Boom harness: P/N 58377



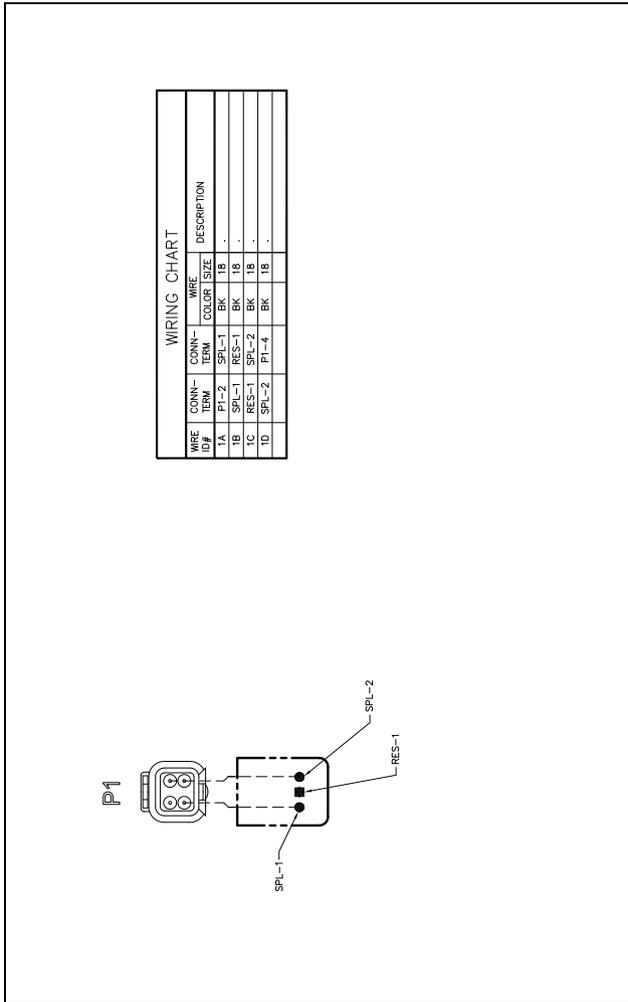
## Terminator connector: P/N 58378



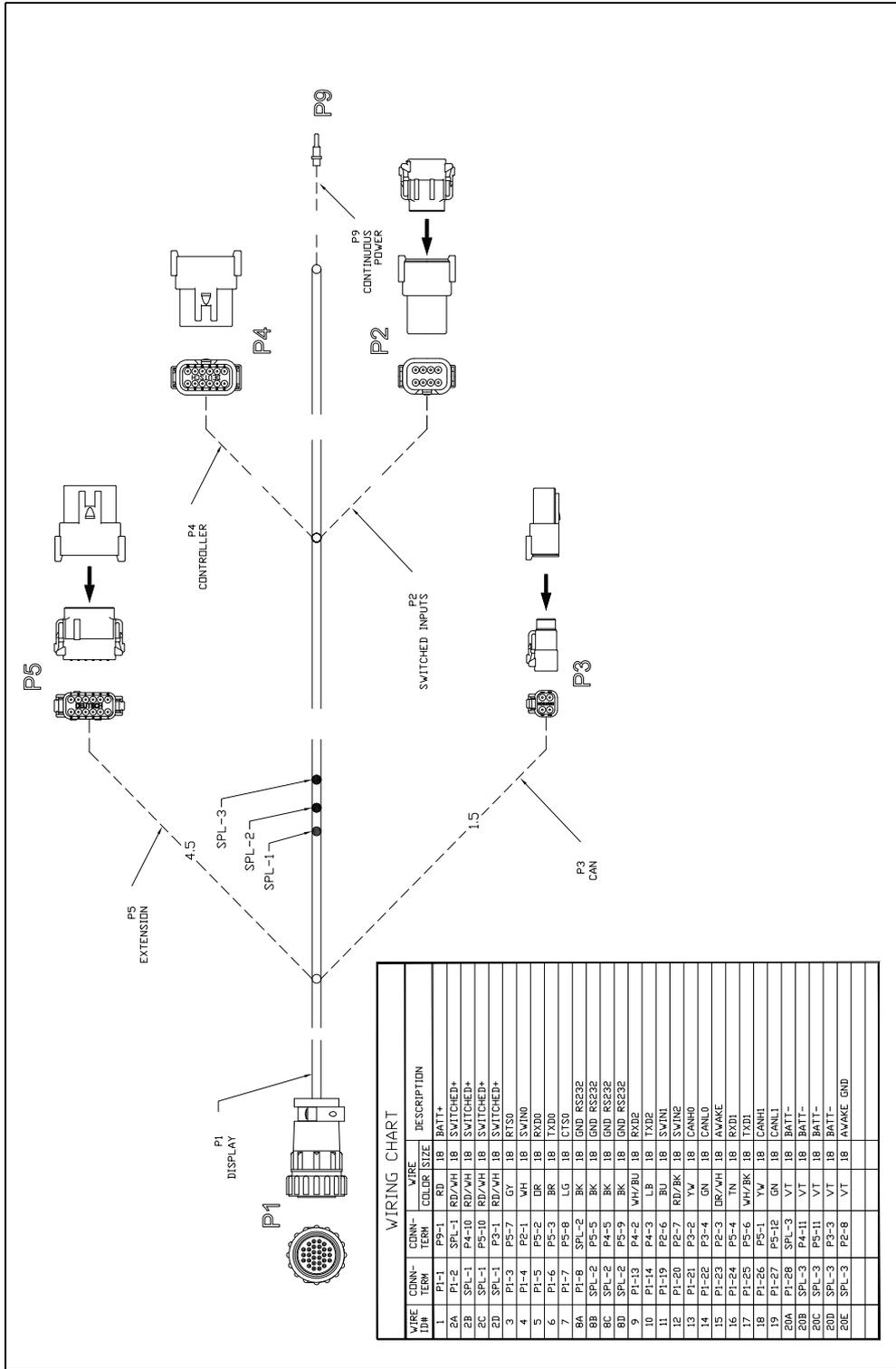
## Raven 4x0 series "Y" cable: P/N 58560



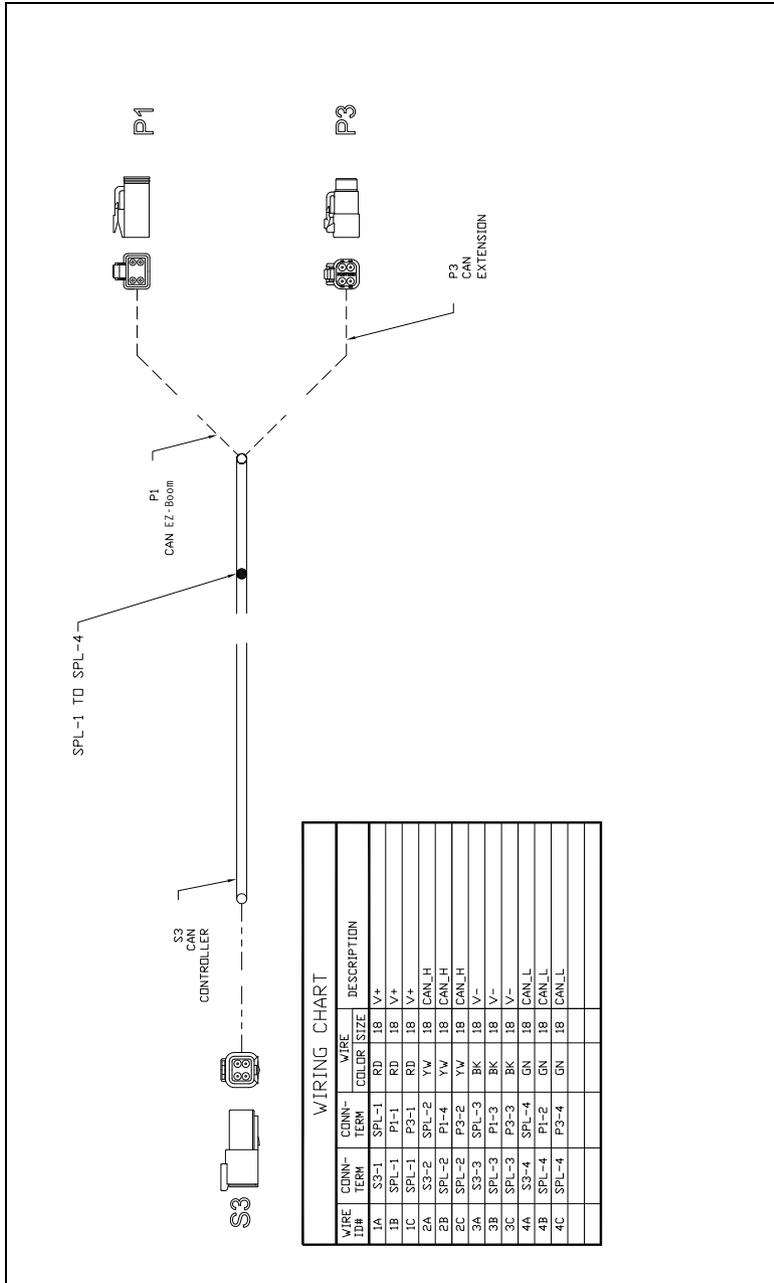
## CAN terminator: P/N 59783



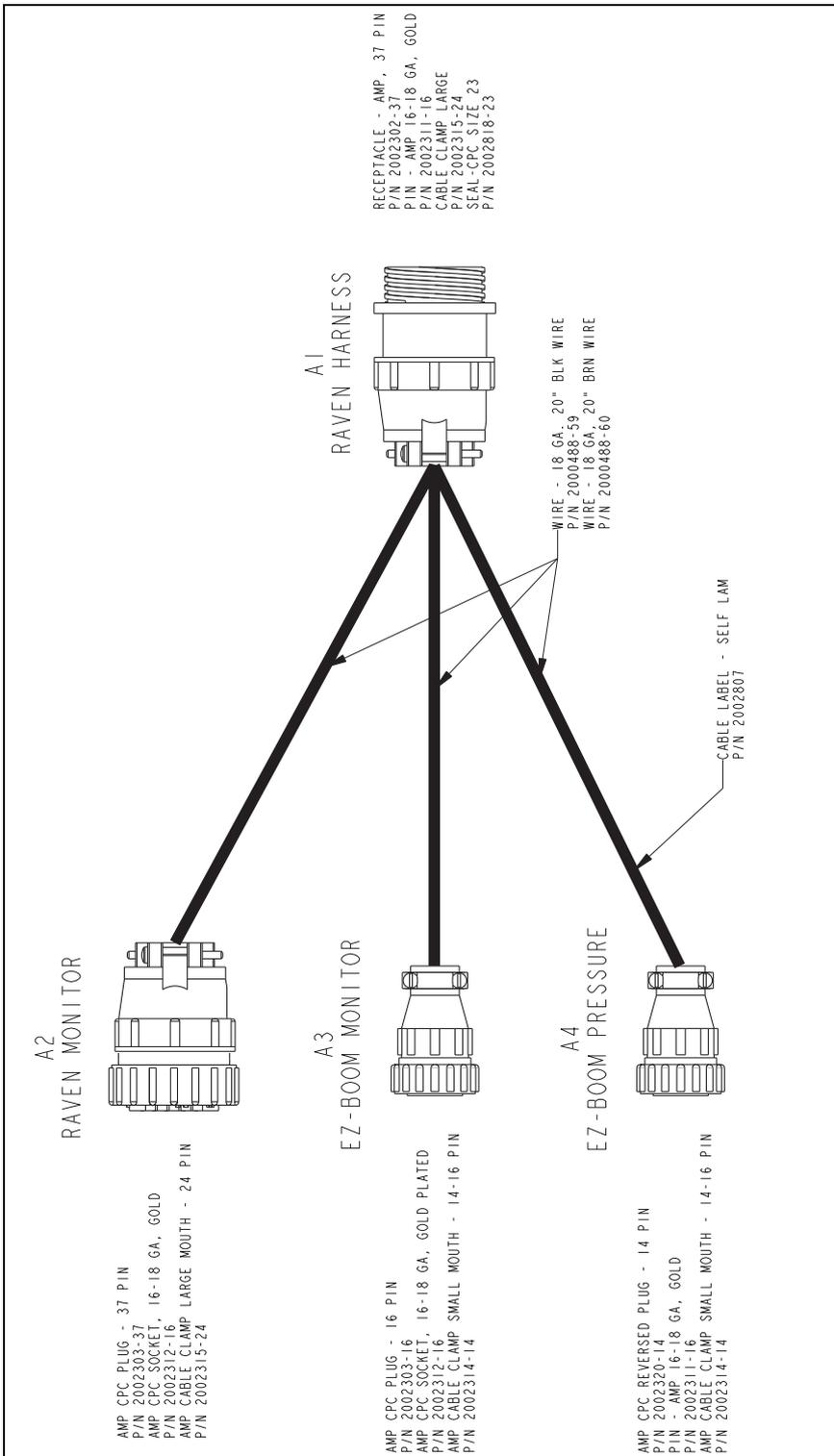
# AgGPS FieldManager display harness (Rev B): P/N 59872



## FieldManager-to-EZ-Boom-extension-cable: P/N 59873

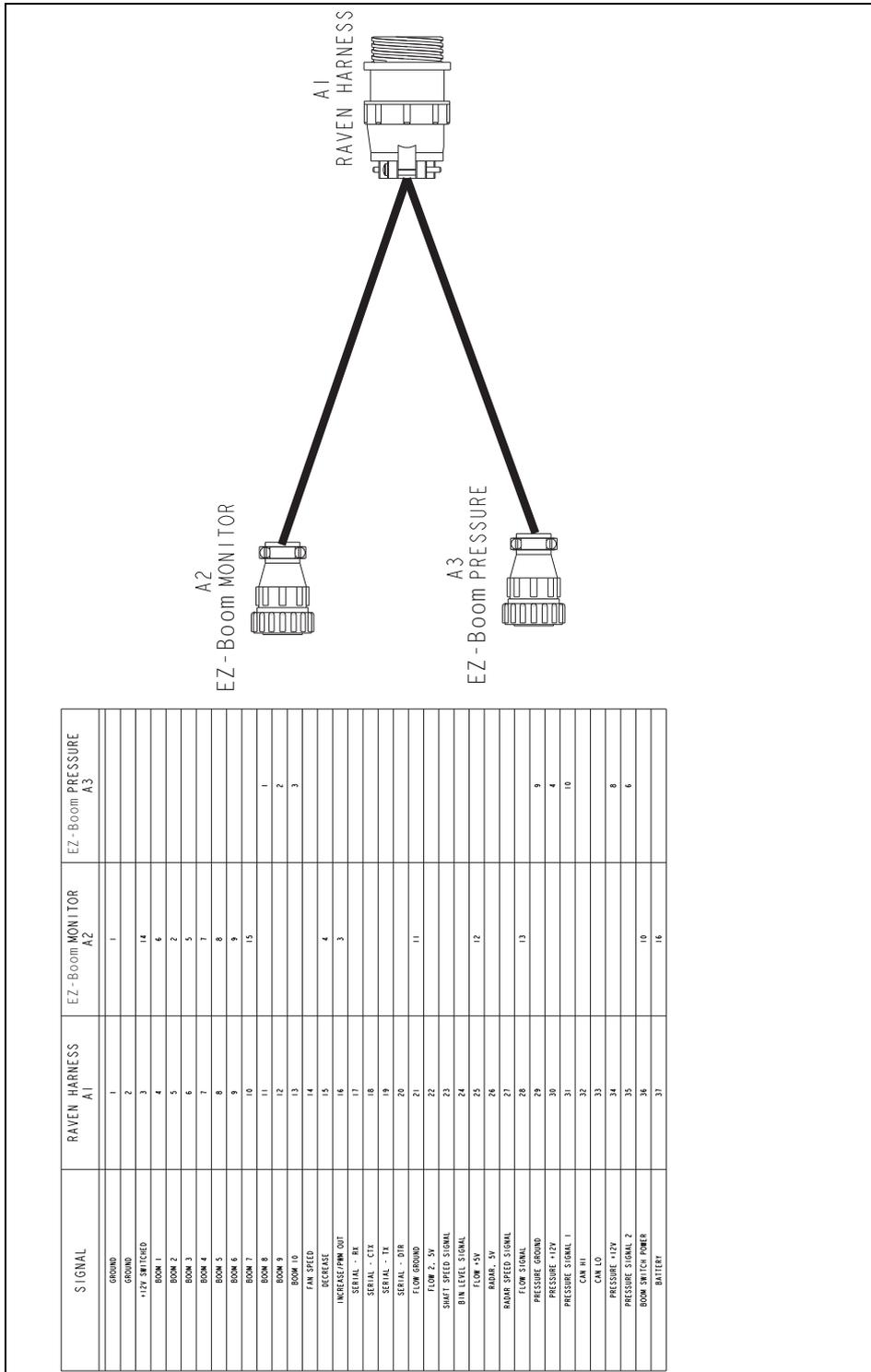


## Raven 4x00 series "Y" cable: P/N 59942 (see next page)

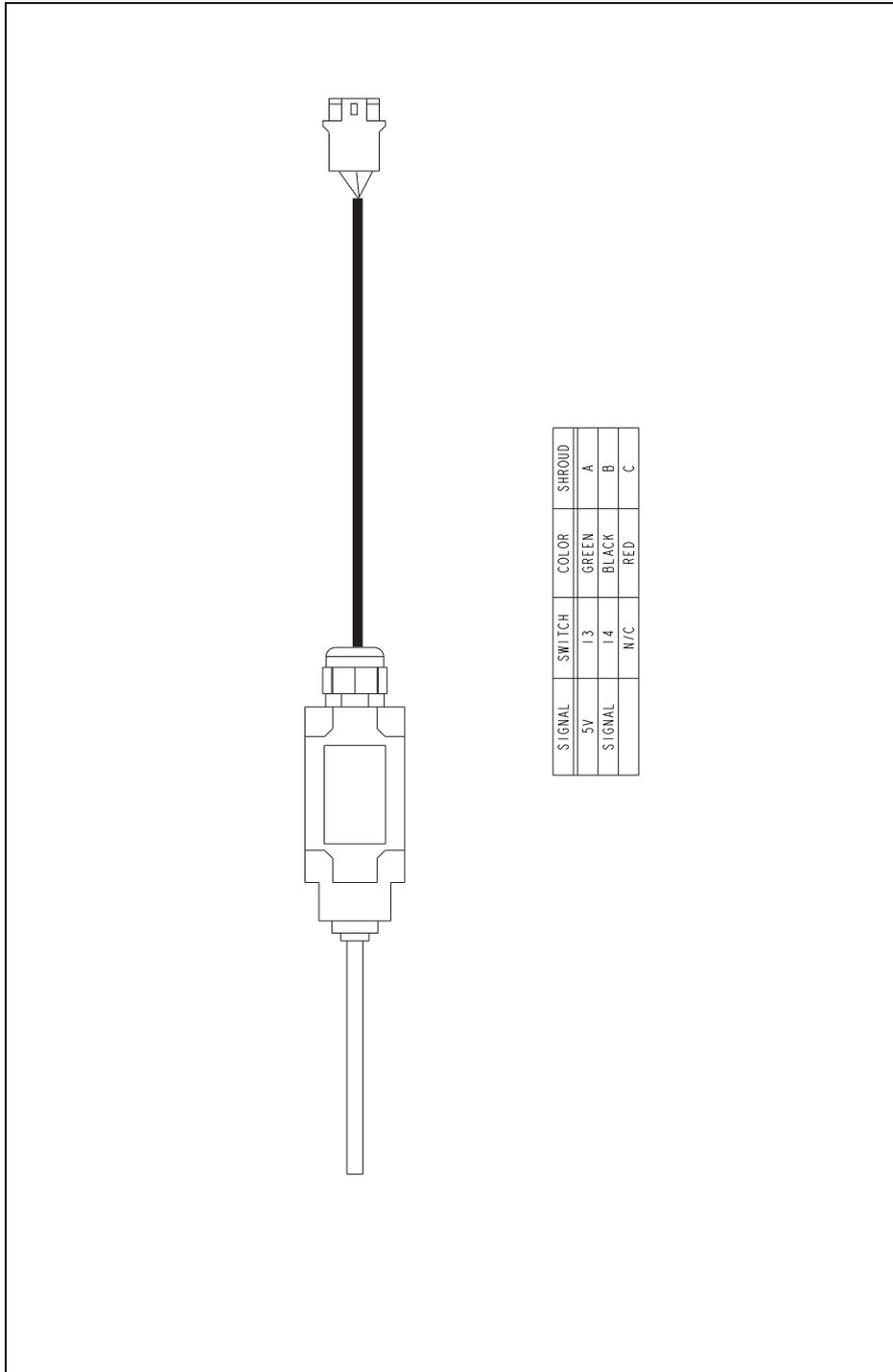


SIGNAL	RAVEN HARNESS A1	RAVEN MONITOR A2	EZ-BOOM MONITOR A3	EZ-BOOM PRESSURE A4
GROUND	1	1	1	
GROUND	2	2		
+12V SWITCHED	3	3		
BOOM 1	4	4	6	
BOOM 2	5	5	2	
BOOM 3	6	6	5	
BOOM 4	7	7	7	
BOOM 5	8	8	8	
BOOM 6	9	9	9	
BOOM 7	10	10	15	
BOOM 8	11	11		1
BOOM 9	12	12		2
BOOM 10	13	13		3
FAN SPEED	14	14		
DECREASE	15	15		
INCREASE/PWM OUT	16	16		
SERIAL - RX	17	17		
SERIAL - CTX	18	18		
SERIAL - TX	19	19		
SERIAL - DTR	20	20		
FLOW GROUND	21	21		
FLOW 2, 5V	22	22		
SHAFT SPEED SIGNAL	23	23		
BIN LEVEL SIGNAL	24	24		
FLOW +5V	25	25		
RADAR, 5V	26	26		
RADAR SPEED SIGNAL	27	27		
FLOW SIGNAL	28	28		
PRESSURE GROUND	29	29		
PRESSURE +12V	30	30		
PRESSURE SIGNAL 1	31	31		
CAM HI	32	32		
CAM LO	33	33		
PRESSURE +12V	34	34		
PRESSURE SIGNAL 2	35	35		
BOOM SWITCH POWER	36	36		
BATTERY	37	37	16	

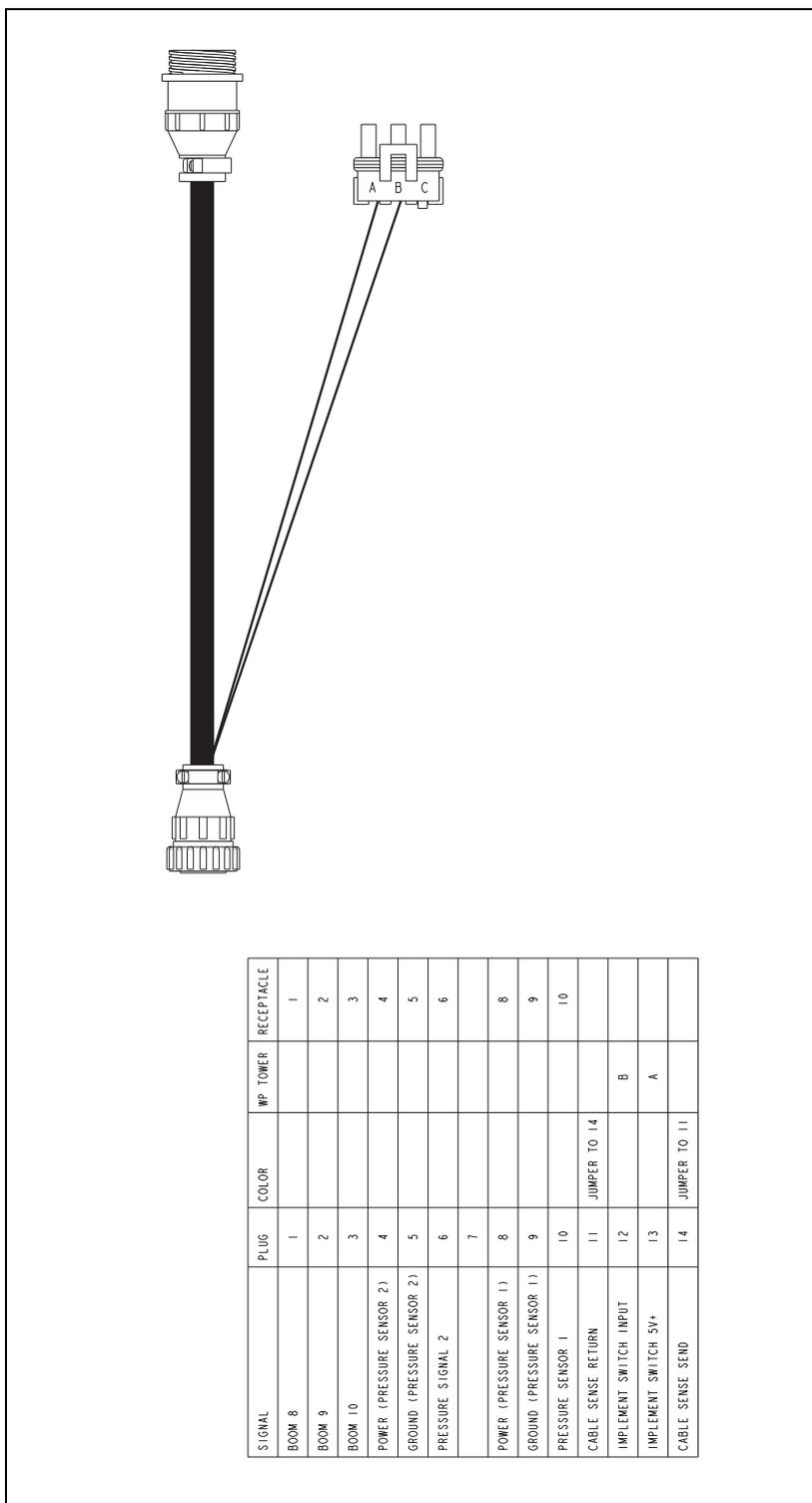
## EZ-Boom-to-Raven-4x00 adaptor harness: P/N 59943



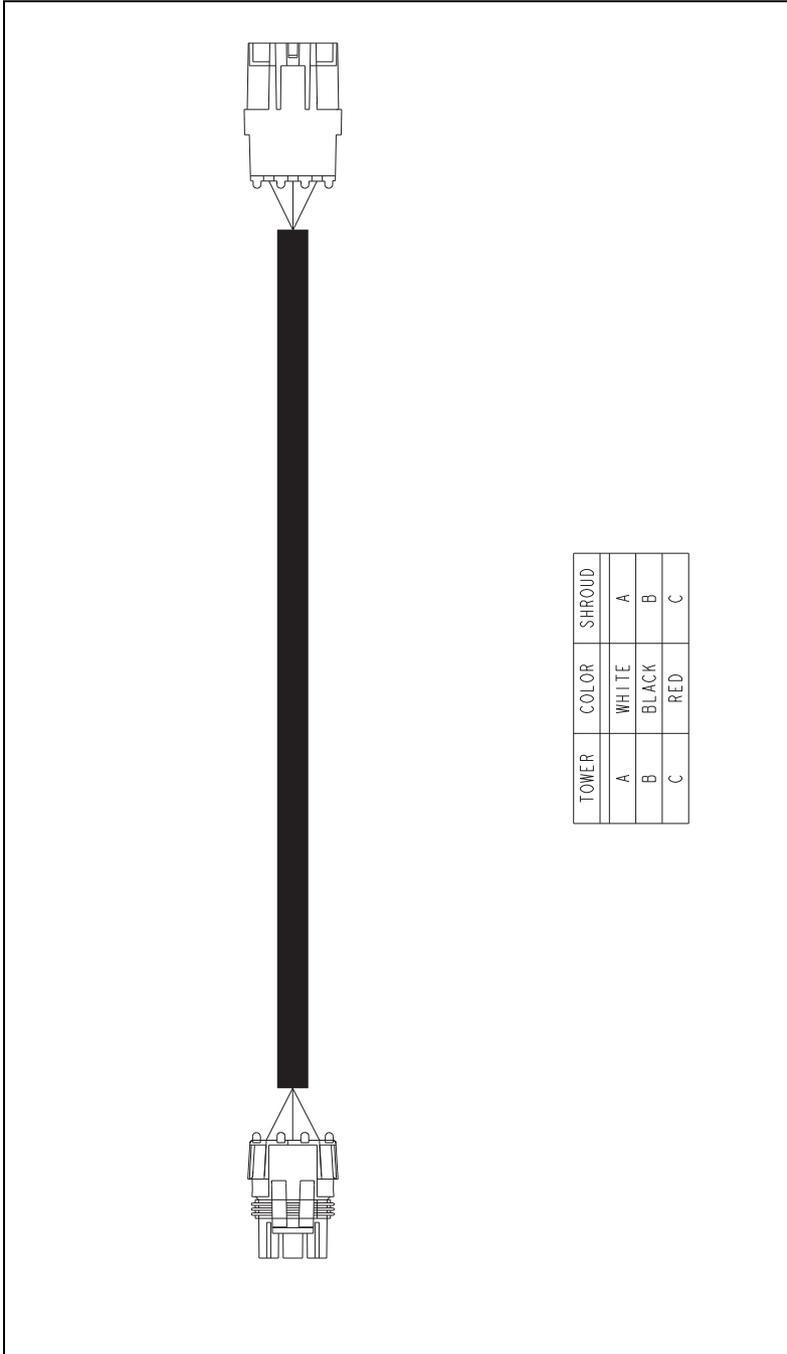
## Implement switch harness: P/N 60477



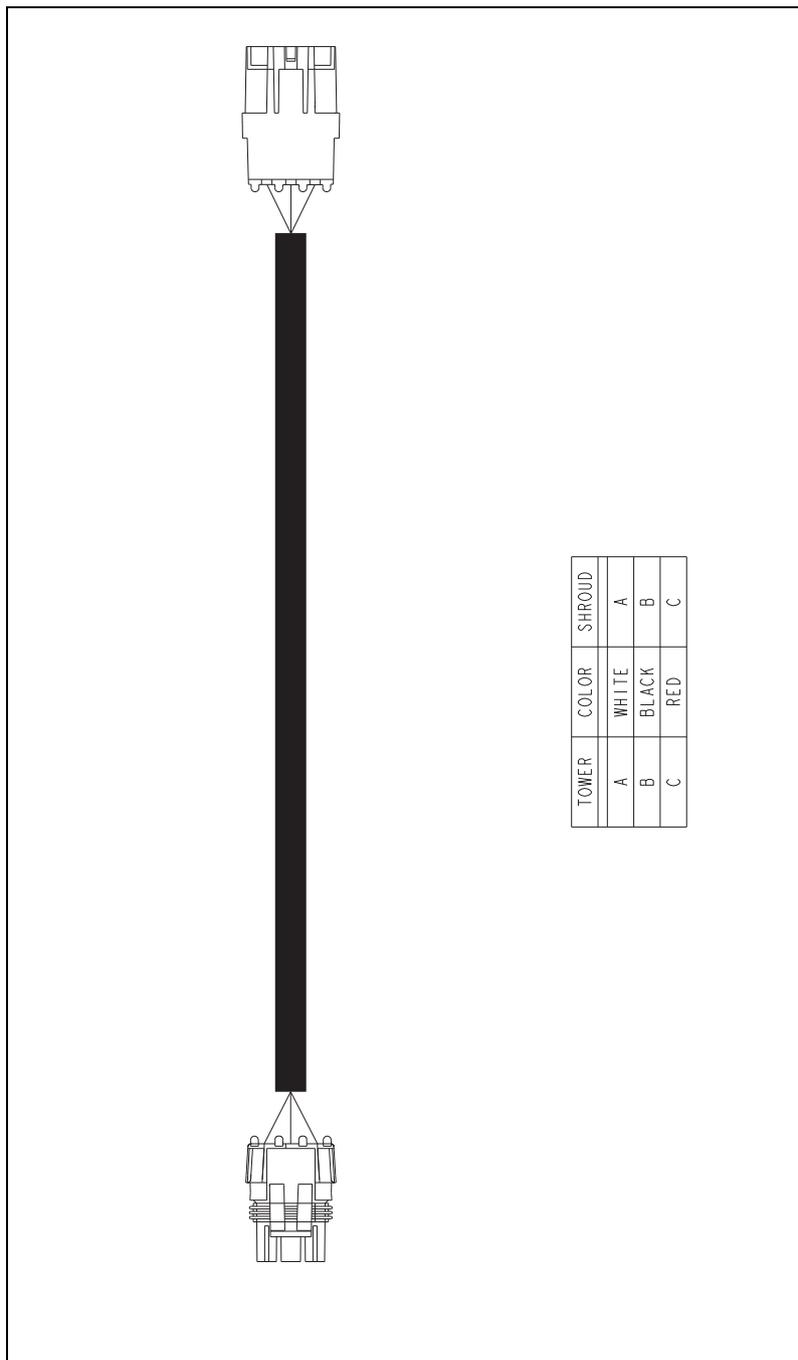
## Implement tee harness: P/N 60567



## Implement switch extension harness (10 ft): P/N 60478

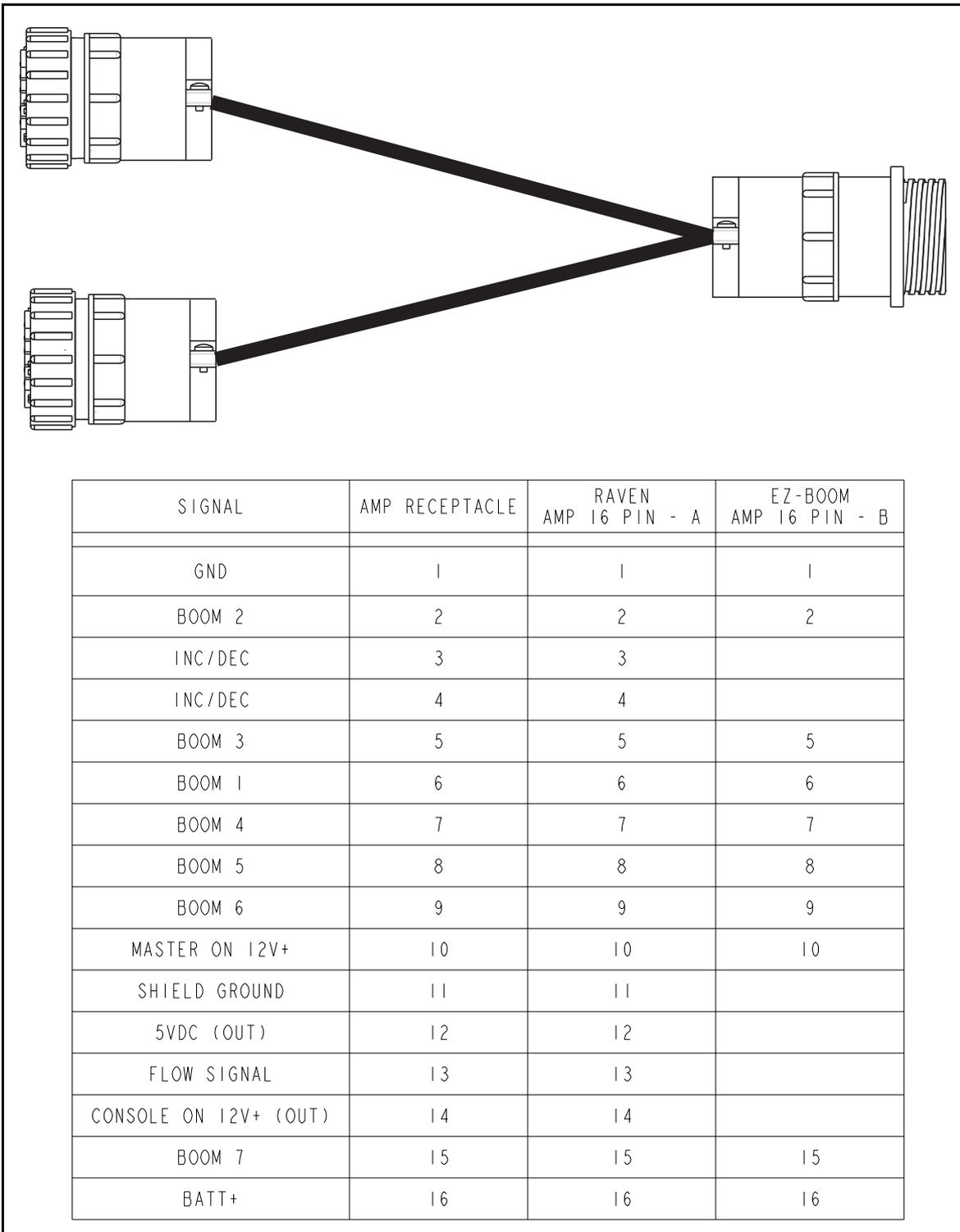


## Implement switch extension harness (25 ft): P/N 60479

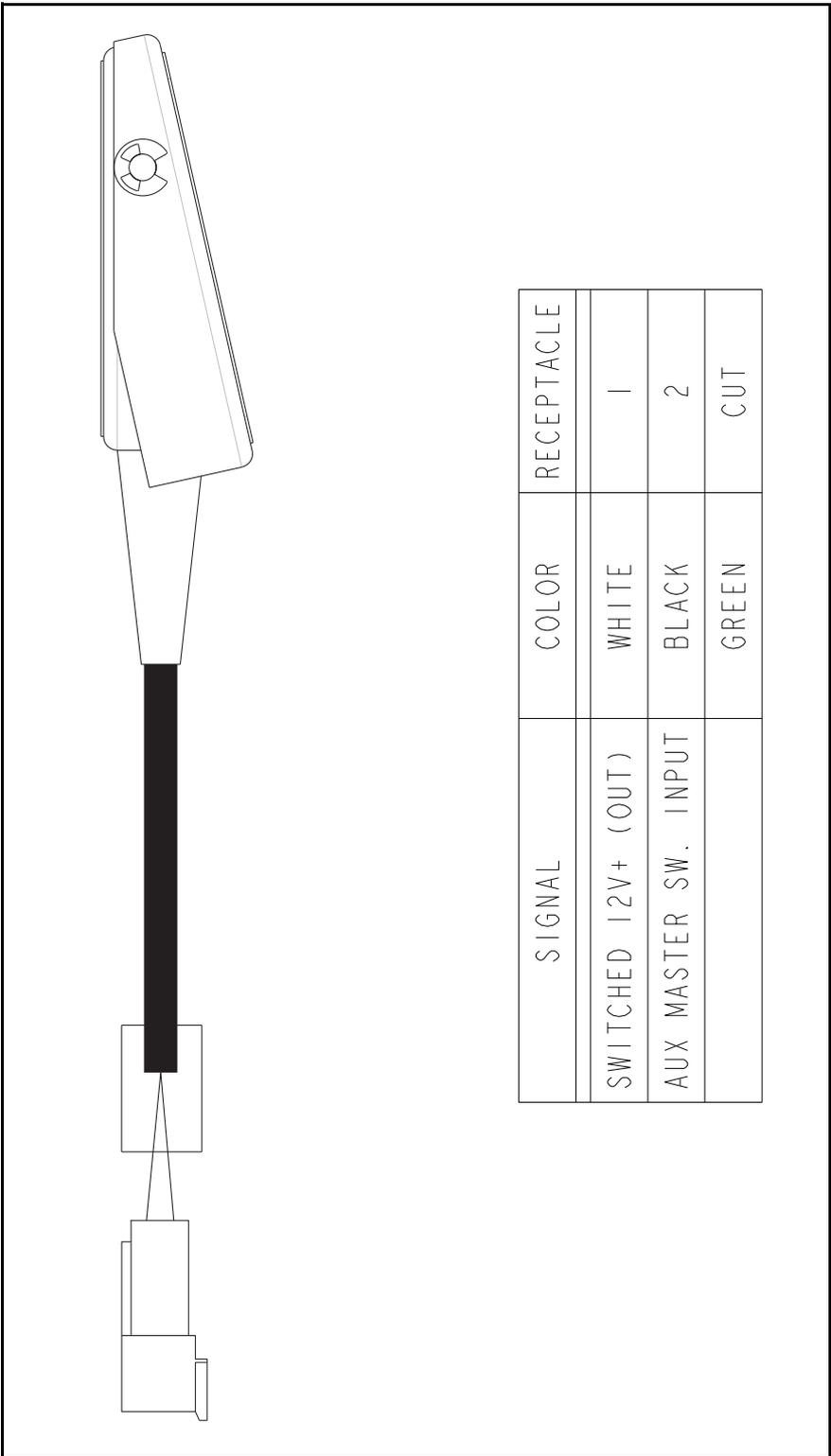


TOWER	COLOR	SHROUD
A	WHITE	A
B	BLACK	B
C	RED	C

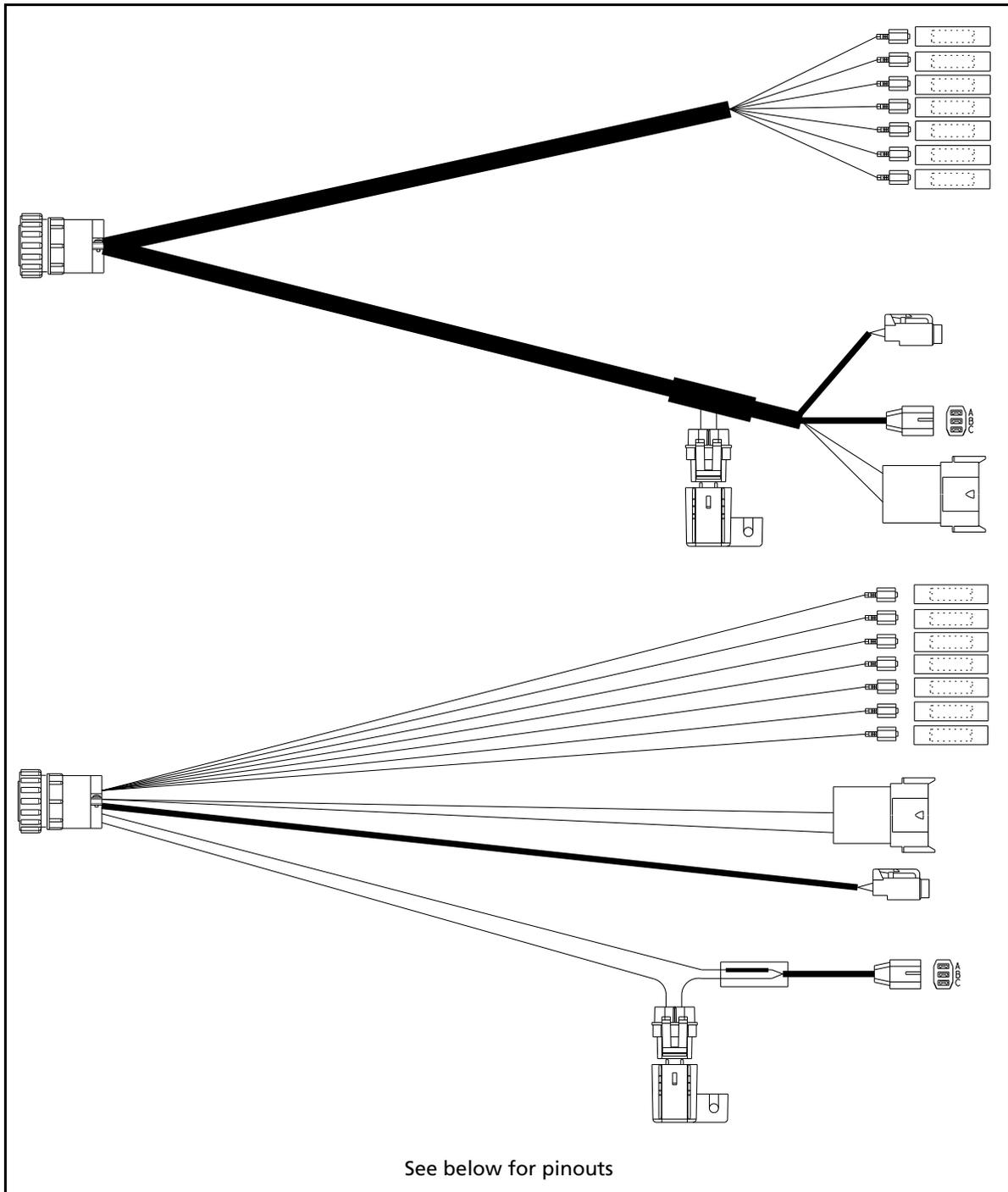
## Raven to EZ-Boom harness: P/N 58560



## Foot pedal assembly: P/N 60490



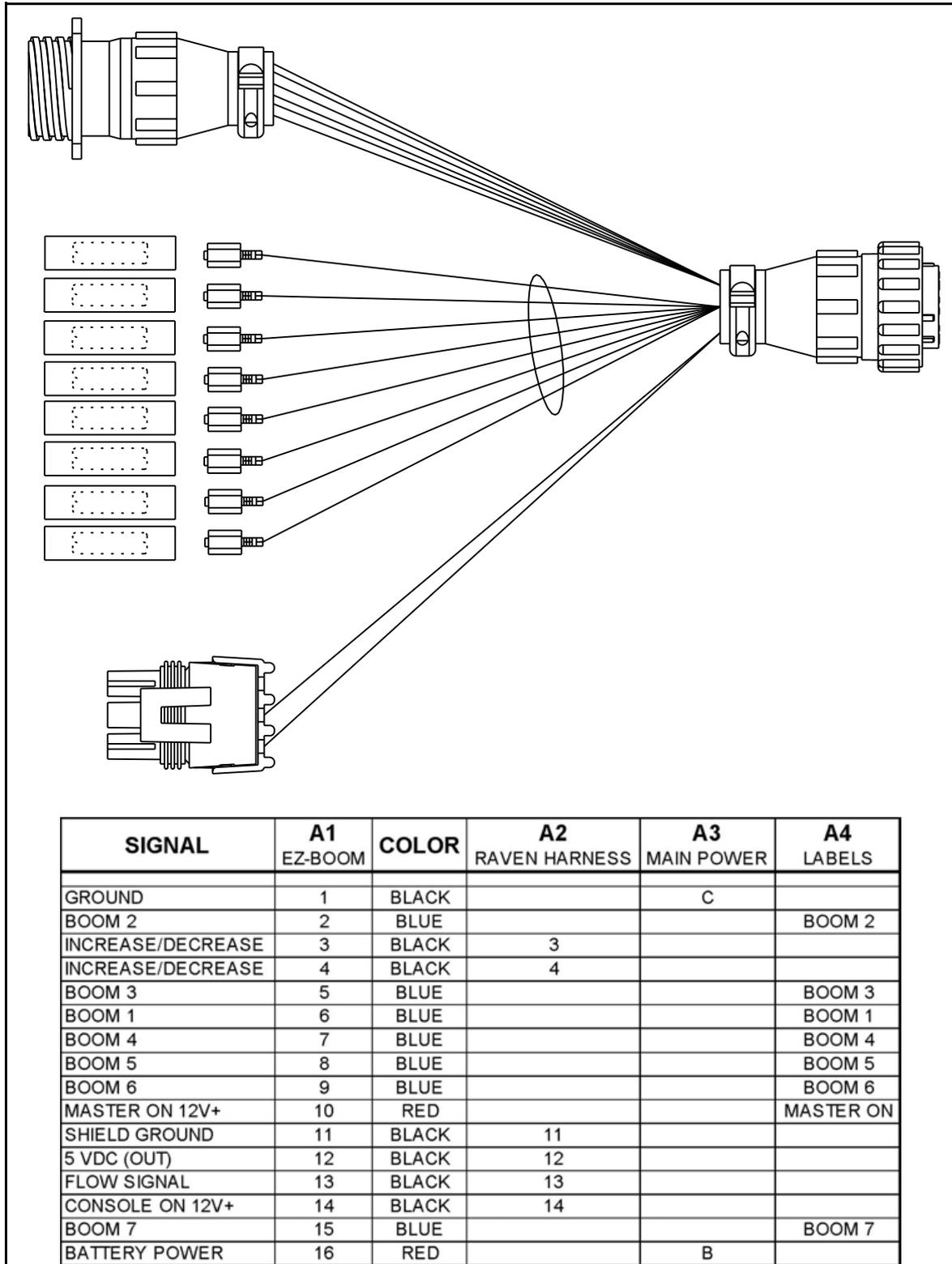
## EZ-Boom cable John Deere 4710, 4720, 4920: P/N 61593



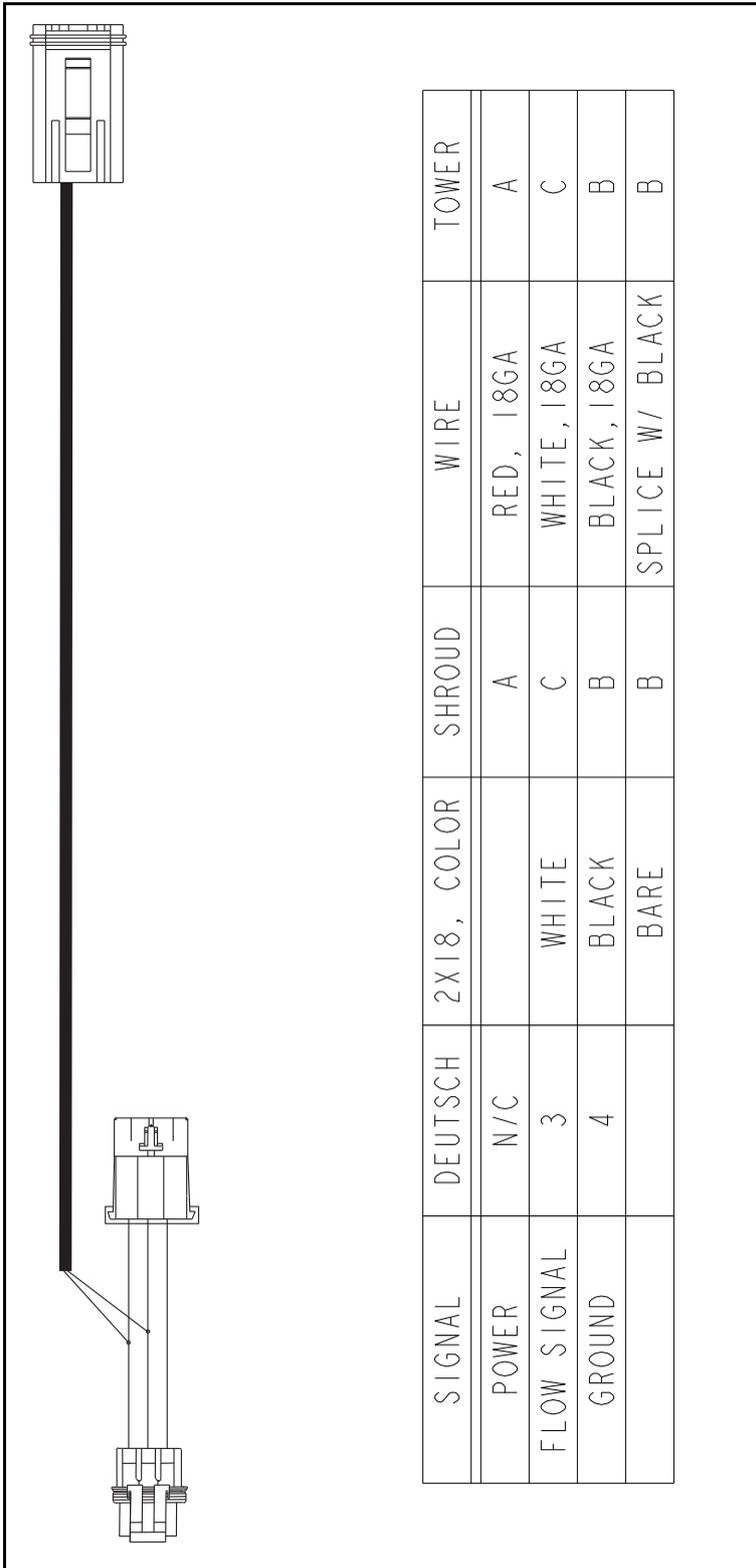
**EZ-Boom cable John Deere 4710, 4720, 4920: P/N 61593 (Pinouts)**

SIGNAL	EZ-BOOM MAIN AMP 16 P/N	COLOR	WIRE LABEL	WIRE P/N	WIRE SIZE	REMOTE MASTER DEUTSCH 2 P/N PLUG	POWER 3 P/N PLUG	FUSE	FLOW METER DEUTSCH 8 P/N RECEPT.	BLADE TERMINALS
GROUND	1 (14 GA)	BLACK		2000986-0	16 GA		B (BLACK WIRE)			
BOOM 2	2	GREEN	BOOM 2	2000976-5	18 GA					2
BOOM 3	5	ORANGE	BOOM 3	2000976-3	18 GA					3
BOOM 1	6	WHITE	BOOM 1	2000976-9	18 GA					1
BOOM 4	7	BLUE	BOOM 4	2000976-6	18 GA					4
BOOM 5	8	BROWN	BOOM 5	2000976-1	18 GA					5
BOOM 6	9	YELLOW	BOOM 6	2000976-4	18 GA					6
AUX. MASTER SWITCH INPUT	10	BLACK		2000943-3X18	18 GA	2				
GROUND	11	BLACK								4
FLOW SIGNAL	13	WHITE								3
SWITCHED 12V+ (OUT)	14	RED		2000943-3X18	18 GA	1				
BOOM 7	15	VIOLET	BOOM 7	2000976-7	18 GA					7
FUSED POWER	16	RED		2000986-2	16 GA			A		
BATTERY POWER								B		

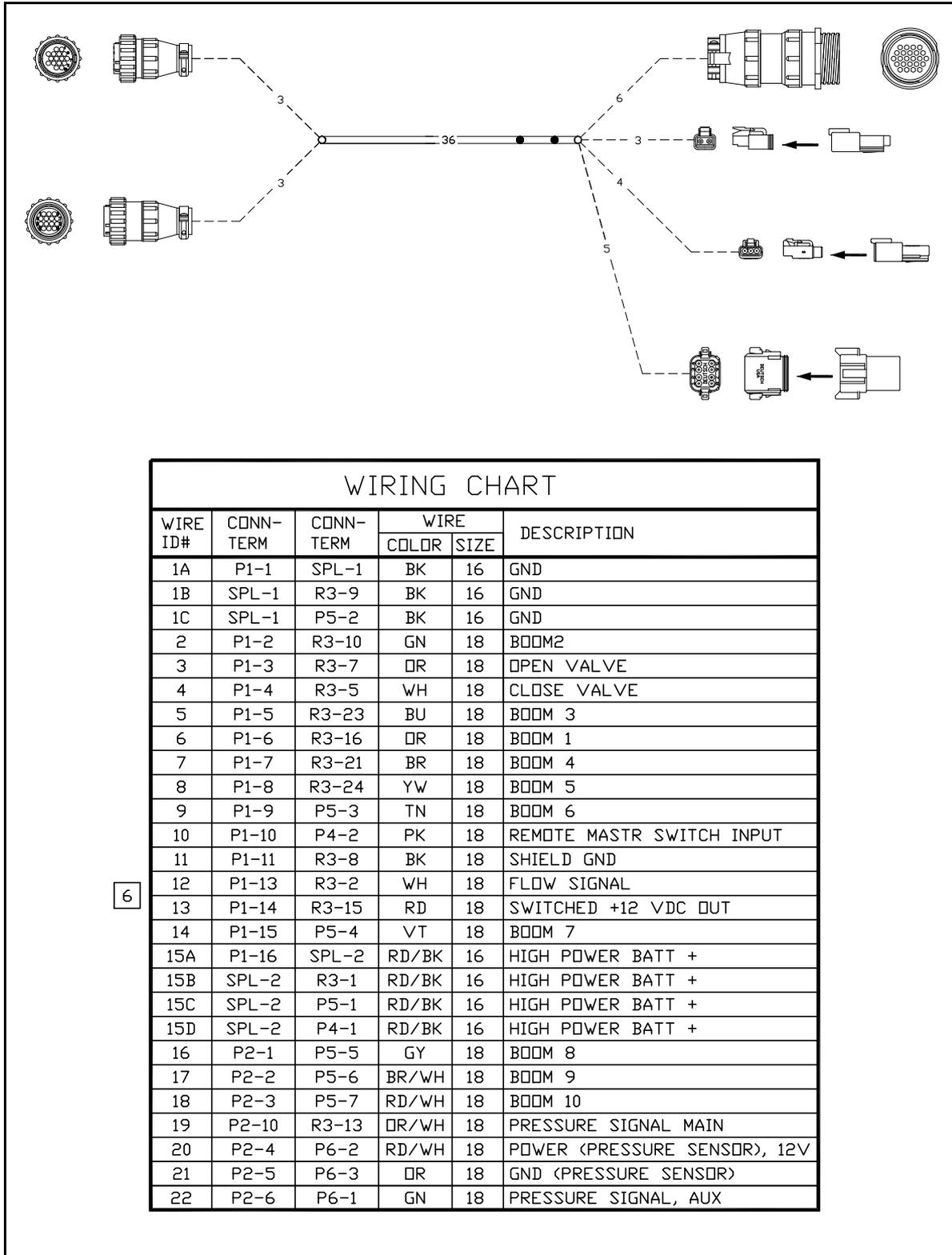
## Spracoupe to EZ-Boom harness: P/N 61991-00



## Flowmeter: P/N 62136



## EZ-Boom to Flexicoil adapter: P/N 64396 (1 of 2)

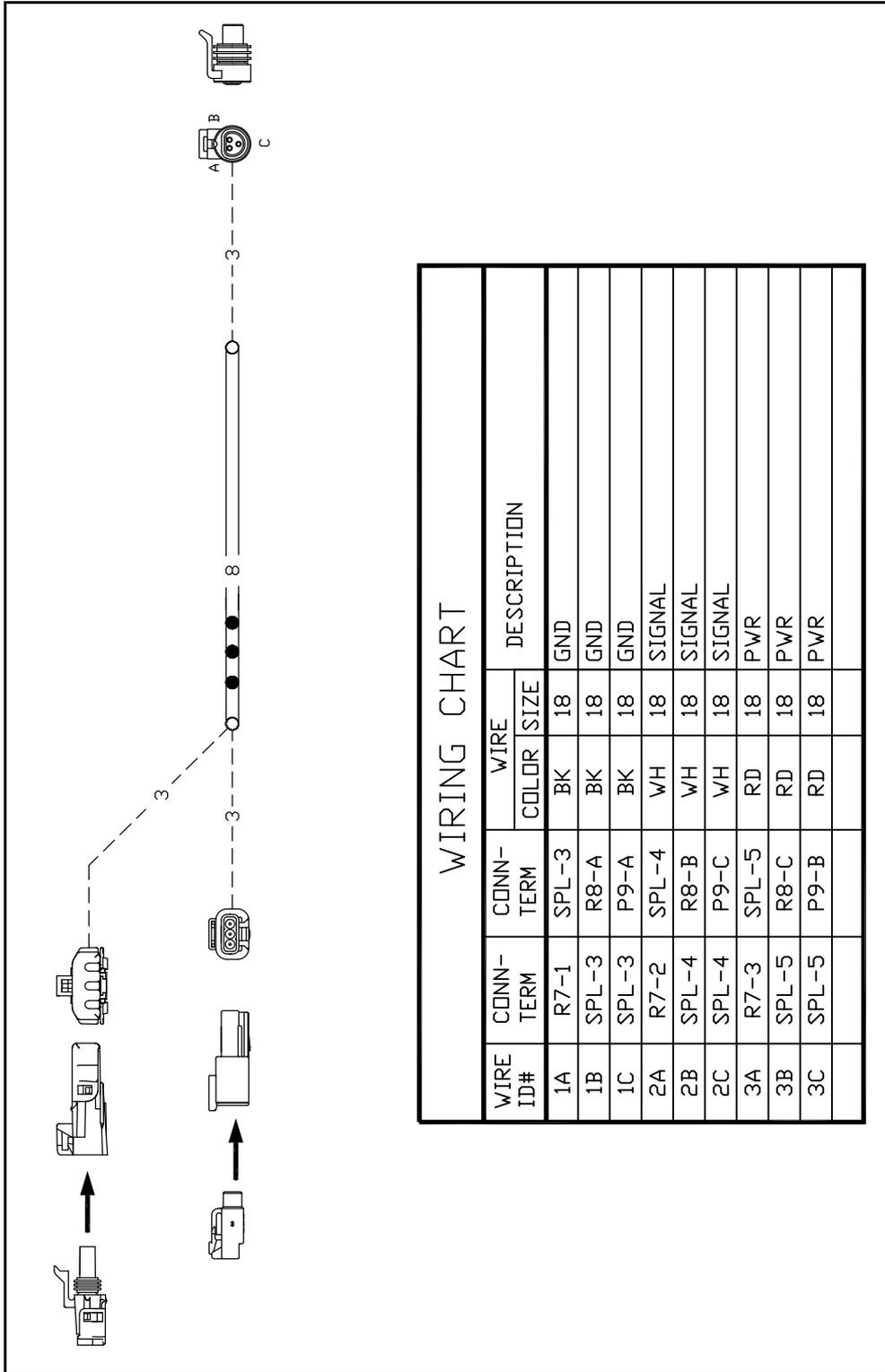


### WIRING CHART

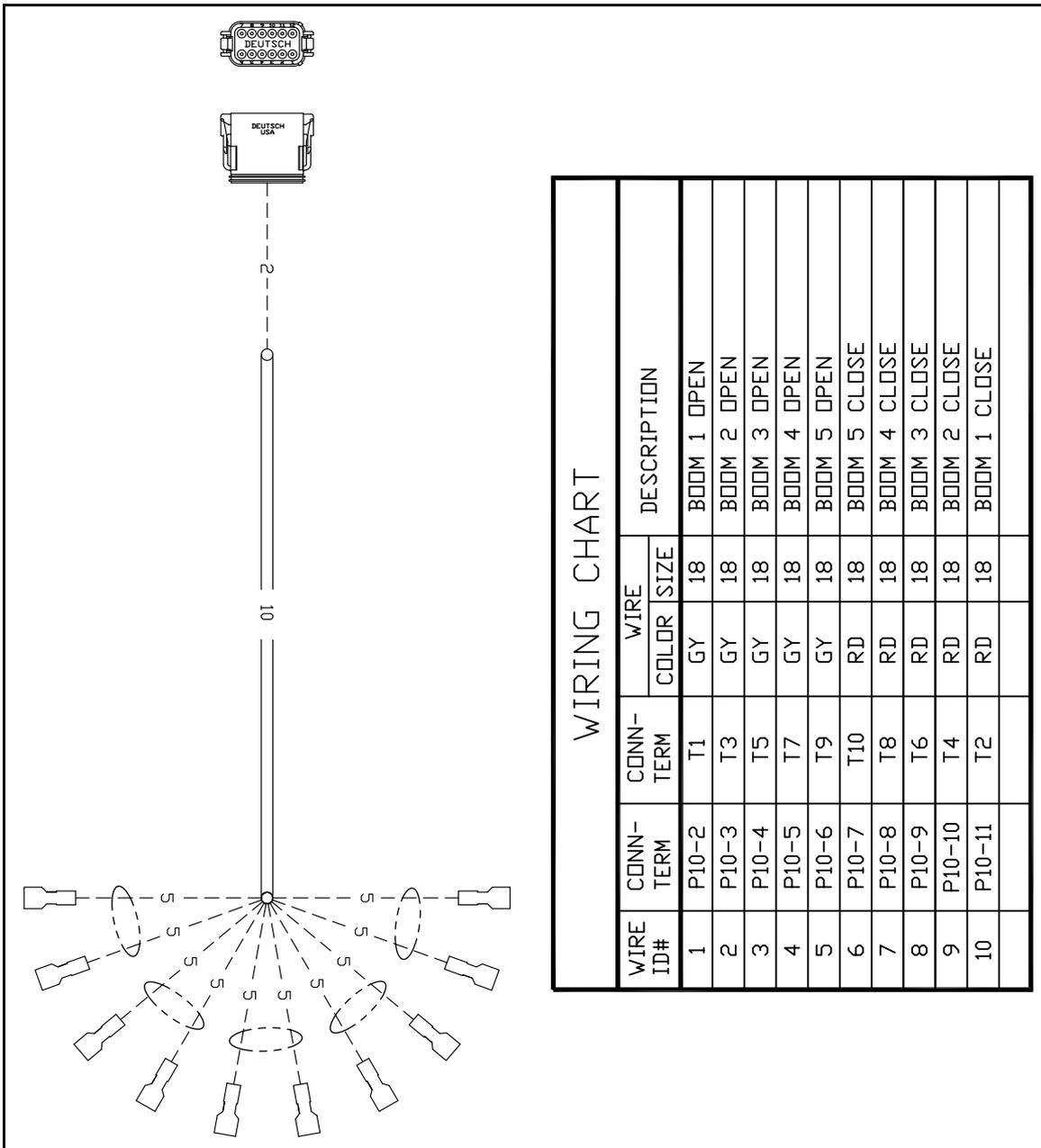
WIRE ID#	CONN-TERM	CONN-TERM	WIRE		DESCRIPTION
			COLOR	SIZE	
1A	P1-1	SPL-1	BK	16	GND
1B	SPL-1	R3-9	BK	16	GND
1C	SPL-1	P5-2	BK	16	GND
2	P1-2	R3-10	GN	18	BOOM2
3	P1-3	R3-7	DR	18	OPEN VALVE
4	P1-4	R3-5	WH	18	CLOSE VALVE
5	P1-5	R3-23	BU	18	BOOM 3
6	P1-6	R3-16	DR	18	BOOM 1
7	P1-7	R3-21	BR	18	BOOM 4
8	P1-8	R3-24	YW	18	BOOM 5
9	P1-9	P5-3	TN	18	BOOM 6
10	P1-10	P4-2	PK	18	REMOTE MASTR SWITCH INPUT
11	P1-11	R3-8	BK	18	SHIELD GND
12	P1-13	R3-2	WH	18	FLOW SIGNAL
13	P1-14	R3-15	RD	18	SWITCHED +12 VDC OUT
14	P1-15	P5-4	VT	18	BOOM 7
15A	P1-16	SPL-2	RD/BK	16	HIGH POWER BATT +
15B	SPL-2	R3-1	RD/BK	16	HIGH POWER BATT +
15C	SPL-2	P5-1	RD/BK	16	HIGH POWER BATT +
15D	SPL-2	P4-1	RD/BK	16	HIGH POWER BATT +
16	P2-1	P5-5	GY	18	BOOM 8
17	P2-2	P5-6	BR/WH	18	BOOM 9
18	P2-3	P5-7	RD/WH	18	BOOM 10
19	P2-10	R3-13	DR/WH	18	PRESSURE SIGNAL MAIN
20	P2-4	P6-2	RD/WH	18	POWER (PRESSURE SENSOR), 12V
21	P2-5	P6-3	DR	18	GND (PRESSURE SENSOR)
22	P2-6	P6-1	GN	18	PRESSURE SIGNAL, AUX

6

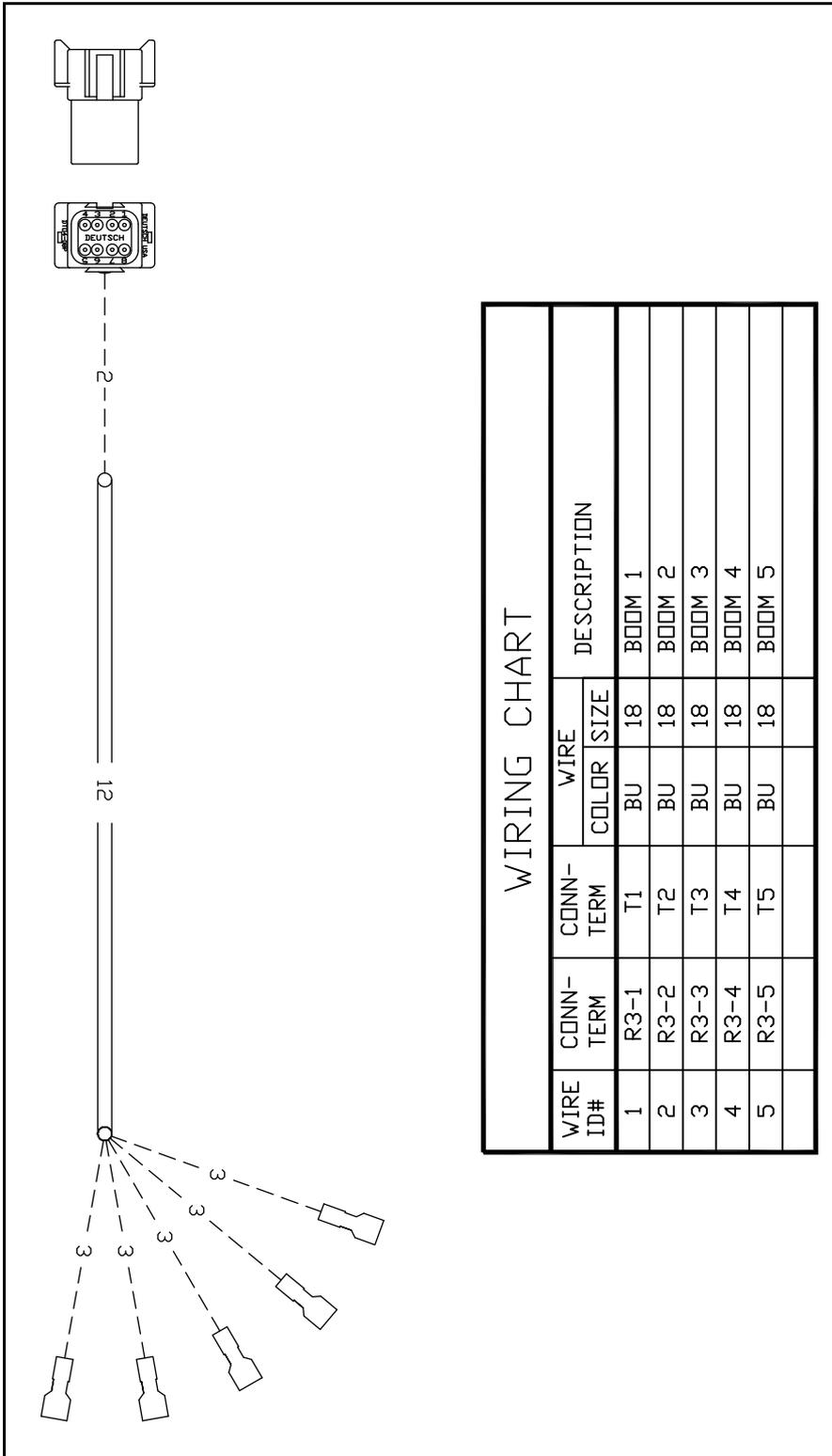
## EZ-Boom to Flexicoil adapter: P/N 64396 (2 of 2)



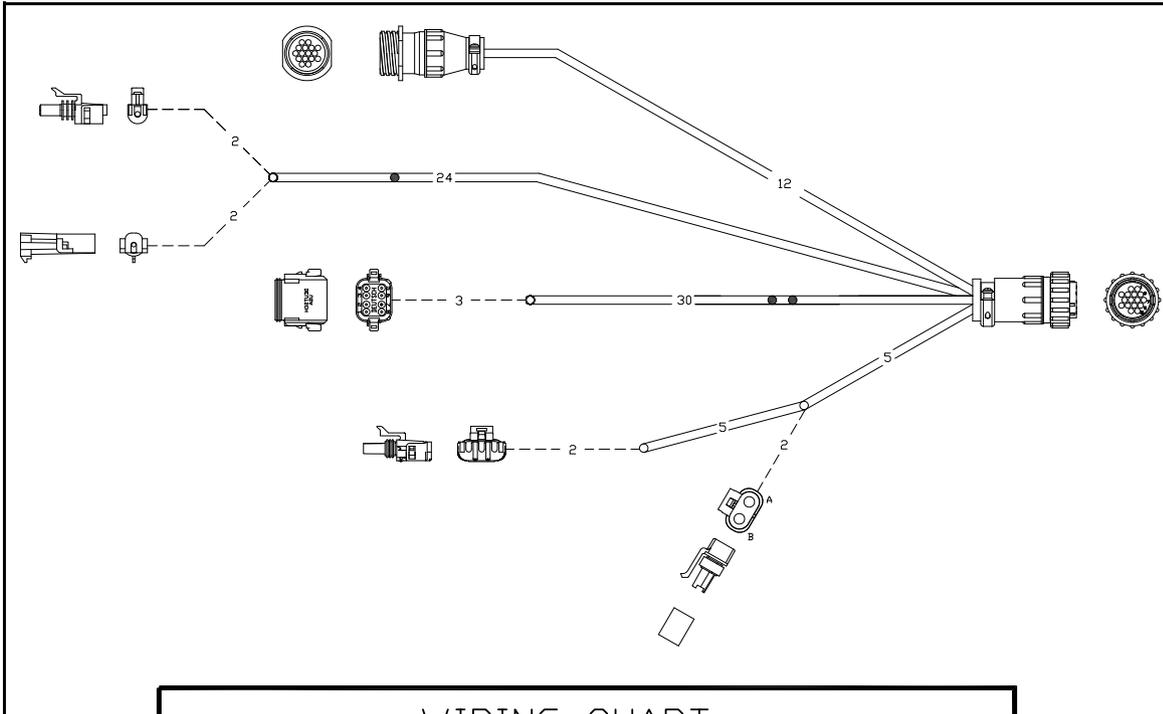
## Spracoupe to EZ-Boom adapter: P/N 64670



## Spracoupe to EZ-Boom cable: P/N 64671 (1 of 2)



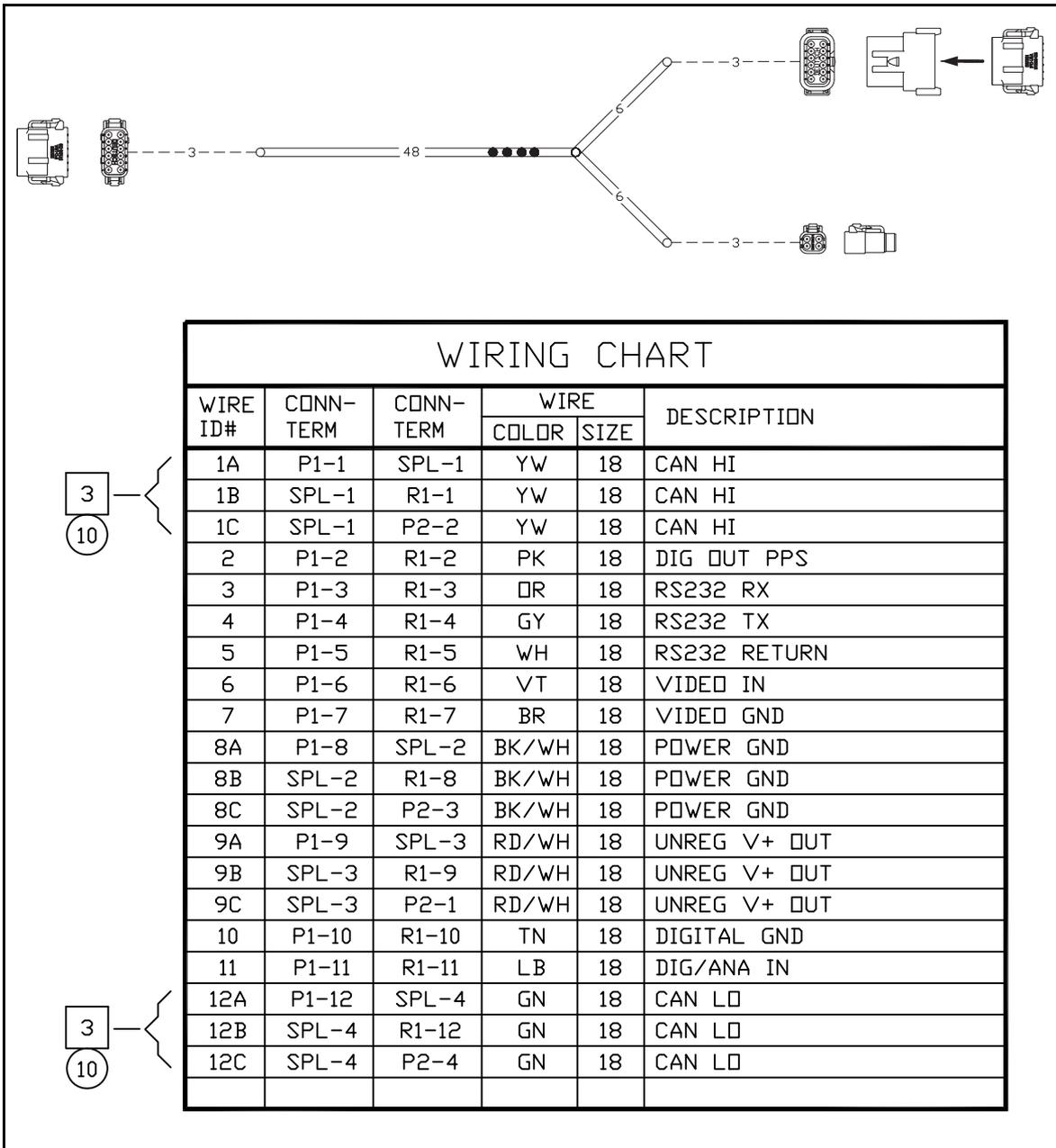
## Spracoue to EZ-Boom cable: P/N 64671 (2 of 2)



WIRING CHART

WIRE ID#	CONN-TERM	CONN-TERM	WIRE		DESCRIPTION
			COLOR	SIZE	
1A	P1-1	SPL-1	BK	18	GND
1B	SPL-1	P3-8	BK	18	GND
1C	SPL-1	P4-C	BK	18	GND
2	P1-2	P3-2	BU	18	BOOM 2
3	P1-3	R2-3	BK	18	INCREASE/DECREASE
4	P1-4	R2-4	BK	18	INCREASE/DECREASE
5	P1-5	P3-3	BU	18	BOOM 3
6	P1-6	P3-1	BU	18	BOOM 1
7	P1-7	P3-4	BU	18	BOOM 4
8	P1-8	P3-5	BU	18	BOOM 5
9A	P1-10	SPL-3	RD	18	MASTER ON 12V+
9B	SPL-3	P5-1	RD	18	MASTER ON 12V+
9C	SPL-3	R6-1	RD	18	MASTER ON 12V+
10	P1-11	R2-11	BK	18	SHIELD GND
11	P1-12	R2-12	BK	18	5 VDC (OUT)
12	P1-13	P2-13	BK	18	FLOW SIGNAL
13	P1-14	R2-14	BK	18	CONSOLE ON 12V+
14A	P1-16	SPL-2	RD	18	BATT+
14B	SPL-2	P3-7	RD	18	BATT+
14C	SPL-2	F1-A	RD	18	BATT+
15	F1-B	P4-A	RD	18	BATT+

## FmX to CAN w/port replicator: P/N 67087



# EZ-Boom 2010 System Technical Specifications

## In this chapter:

- [Technical specifications](#)

This chapter lists the technical specifications of the EZ-Boom 2010 system.

## Technical specifications

Item	Description
Dimensions	266 mm W x 115 mm H x 87 mm D (10.5" W x 4.5" H x 3.4" D)
Weight	0.855 kg (1.89 lb)
Environmental	Sealed to IP54
Operating temperature	-40°C to 70°C
Storage temperature	-40°C to 70°C
Inputs	4 x digital inputs (flowmeter, remote switch, implement switch, cable sense) Switching threshold: 1.25 V Tolerate: -18 V to +18 V ESD protected 2 x analog pressure inputs (main and auxiliary) Analog range: 0 V to 5 V Tolerate: -18 V to +18 V ESD protected
Outputs	Boom drives 10 high-side drivers 4 A steady state each Protected against short to ground, over-temperature, over-current Servo drive H-bridge servo drive IC 4 A steady state each Protected against short to ground and +12, over-temperature, over-current
Supply outputs	5 V output Limited at approx 0.7 A Protected against short to ground, over-temperature, ESD 12 V output Limited at approx 0.7 A Protected against short to ground, over-temperature, ESD

