

**John Deere 4700, 4710, 4720,
4730, 4830, 4920, and 4930
AccuBoom™
Installation Manual**

P/N 016-1001-051 Rev C 01-16

E21483

Disclaimer

While every effort has been made to ensure the accuracy of this document, Raven Industries assumes no responsibility for omissions and errors. Nor is any liability assumed for damages resulting from the use of information contained herein.

Raven Industries shall not be responsible or liable for incidental or consequential damages or a loss of anticipated benefits or profits, work stoppage or loss, or impairment of data arising out of the use, or inability to use, this system or any of its components. Raven Industries shall not be held responsible for any modifications or repairs made outside our facilities, nor damages resulting from inadequate maintenance of this system.

As with all wireless and satellite signals, several factors may affect the availability and accuracy of wireless and satellite navigation and correction services (e.g. GPS, GNSS, SBAS, etc.). Therefore, Raven Industries cannot guarantee the accuracy, integrity, continuity, or availability of these services and cannot guarantee the ability to use Raven systems, or products used as components of systems, which rely upon the reception of these signals or availability of these services. Raven Industries accepts no responsibility for the use of any of these signals or services for other than the stated purpose.

Chapter 1	<i>Important Safety Information</i>	1
	Important Safety Information	1
Chapter 2	<i>Introduction</i>	3
	Preparing for Installation	3
	Recommendations	3
	Tools Needed	4
	Point of Reference	4
	Updates	4
	Kit Contents	5
Chapter 3	<i>AccuBoom Installation</i>	7
	Mount the AccuBoom Node	7
	Install the AccuBoom Harness Cable	8
	Preparation	8
	Connect the AccuBoom Harness Cable	9
Chapter 4	<i>Section Mapping Setup</i>	13
	Envizio Pro	13
	Viper Pro	14
Chapter 5	<i>Troubleshooting</i>	15

CHAPTER

1

Important Safety Information

Important Safety Information

NOTICE

Read this manual and the operation and safety instructions included with your implement and/or controller carefully before installing the AccuBoom™ system.

- Follow all safety information presented within this manual.
- If you require assistance with any portion of the installation or service of your Raven equipment, contact your local Raven dealer for support.
- Follow all safety labels affixed to the AccuBoom system components. Be sure to keep safety labels in good condition and replace any missing or damaged labels. To obtain replacements for missing or damaged safety labels, contact your local Raven dealer.

When operating the machine after installing AccuBoom, observe the following safety measures:

- Be alert and aware of surroundings.
- Do not operate AccuBoom or any agricultural equipment while under the influence of alcohol or an illegal substance.
- Remain in the operator's position in the machine at all times when AccuBoom is enabled.
- Disable AccuBoom when exiting from the operator's seat and machine.
- Do not drive the machine with AccuBoom enabled on any public road.
- Determine and remain a safe working distance from other individuals. The operator is responsible for disabling AccuBoom when the safe working distance has diminished.
- Ensure AccuBoom is disabled prior to starting maintenance on AccuBoom or the machine.

CAUTION

- Always verify that the power leads are connected to the correct polarity as marked. Reversing the power leads could cause severe damage to the equipment.
- Ensure that the power cable is the last cable to be connected.

CHAPTER

2

Introduction

Congratulations on your purchase of the Raven AccuBoom system! This system was designed to provide accurate and cost-efficient application control by avoiding no-spray zones and eliminating wasteful overlaps.

This manual applies to the following machines.

MAKE: John Deere

MODEL: 4700, 4710, 4720, 4730, 4830, 4920, and 4930

YEAR:

SERIAL NUMBER:

Preparing for Installation

Before installing AccuBoom, park the machine where the ground is level, clean, and dry. Leave the machine turned off for the duration of the installation process.

During the installation process, follow good safety practices. Be sure to carefully read the instructions in this manual as you complete the installation process.

Recommendations

Raven Industries recommends the following best practices when installing the AccuBoom system:

- Use part numbers to identify parts.
- Do not remove the plastic wrap from a part until it is necessary for installation.
- Recommended cable routing practices:
 - Locate available switched and battery power sources before installation.
 - Map out best available cable routes before installation.
 - Ensure cables are able to rest in a relaxed state and are not pinched, kinked, or stretched.
 - Route cables away from moving parts and heat sources.

Tools Needed

The following tools are recommended for installation of the AccuBoom system:

- 1/4" nut driver or SAE standard-sized wrenches, sockets, and ratchet wrench.
- Cables ties.
- Set of tools.

Point of Reference

The instructions in this manual assume that you are standing behind the machine, looking toward the machine cabin.

Note: Section 1 will always be to the left end of the boom or implement.

Updates

Software and manual updates are available on the Raven Applied Technology website:

<http://www.ravenhelp.com>

At Raven Industries, we strive to make your experience with our products as rewarding as possible. One way to improve this experience is to provide us with feedback on this manual.

Your feedback will help shape the future of our product documentation and the overall service we provide. We appreciate the opportunity to see ourselves as our customers see us and are eager to gather ideas on how we have been helping or how we can do better.

To serve you best, please send an email with the following information to

techwriting@ravenind.com

-John Deere 4700, 4710, 4720, 4830, 4920, and 4930 AccuBoom Installation Manual

-Manual No. 016-1001-051 Rev. C

-Any comments or feedback (include chapter or page numbers if applicable).

-Let us know how long have you been using this or other Raven products.

We will not share your email or any information you provide with anyone else. Your feedback is valued and extremely important to us.


Thank you for your time.

Kit Contents

This section contains a list of the components that are included in the AccuBoom kit. Before beginning the AccuBoom installation, compare the items in the AccuBoom kit with the components on this list. If you have questions about the kit, contact your local Raven dealer.

Important: In addition to the following kit components, an AccuBoom CAN node (P/N 063-0172-316) is required for the operation of the AccuBoom system. Also, if a CAN system is not currently installed on the machine, a CAN terminator/power tee kit (P/N 117-0159-923) is required.

TABLE 1. AccuBoom Installation Kit (P/N 117-1004-051)

Picture	Item Description	Part Number	Qty.
Not Pictured	Manual - John Deere 4700, 4710, 4720, 4730, 4830, 4920 & 4930 AccuBoom Installation	016-1001-051	1
	Cable - 6' CANBus	115-0171-326	1
Not Pictured	Cable - John Deere CAN AccuBoom	115-1001-021	1

CHAPTER

3

AccuBoom Installation

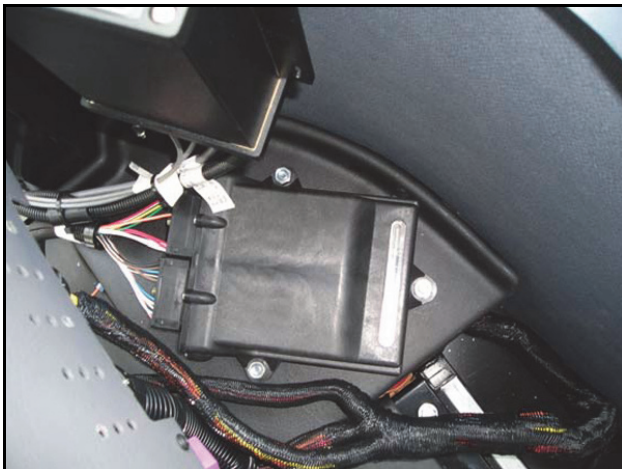
The instructions in this manual are designed to assist in the installation of the AccuBoom system on John Deere 4700, 4710, 4720, 4730, 4830, 4920, and 4930 machines. Refer to the Installation & Operation Manual for the specific field computer being used for instructions on setting up the software and using the AccuBoom system.

Mount the AccuBoom Node

Note: It may be necessary to connect the AccuBoom harness cable to the control node before permanently mounting or securing the node.

1. Mount the AccuBoom node (P/N 063-0172-316) in the machine cabin in a location that will not interfere with the routine operation of the machine.

FIGURE 1. Potential AccuBoom Node Mounting Location Examples



Install the AccuBoom Harness Cable

Preparation

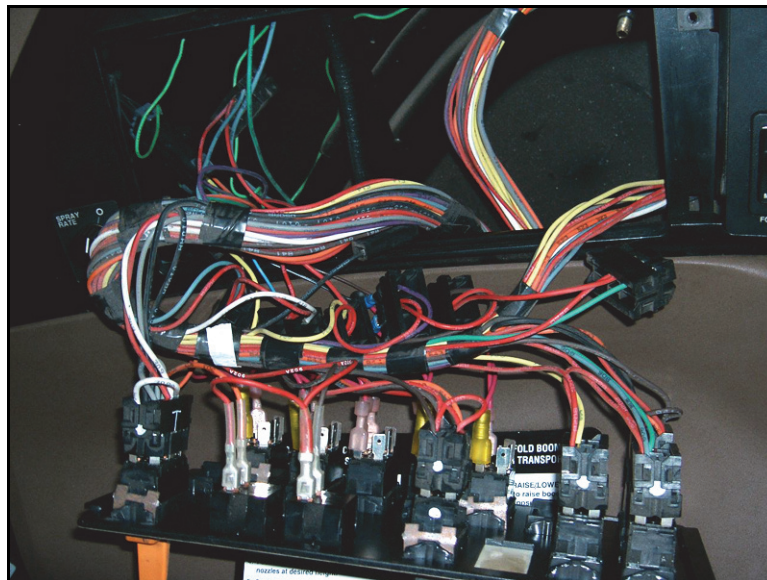
1. Locate the boom switch panel on the right side of the machine cabin.
2. Remove the screw and retainer plate to access the boom switches.

FIGURE 2. Switch Panel Access



3. Carefully open the switch panel to access the switch connections.

FIGURE 3. Back Side of Switch Panel



4. Locate the auxiliary power strip in front of the control panel housing.

5. Route the spade terminal connectors on the AccuBoom harness cable (P/N 115-1001-021) behind the control panel between the window and control panel housing near the auxiliary power strip.

AccuBoom
Harness
Routing



6. Route the spade terminal connectors to the back of the switch panel. Refer to the *Section Switch Leads* section on page 9 to connect the spade terminals to the machine switches.

Connect the AccuBoom Harness Cable

Section Switch Leads

The AccuBoom harness cable (P/N 115-1001-021) provides seven pairs of lead wires with spade connectors. Each pair of leads uses the same color wire and each pair corresponds to one of up to seven section switches available in the machine switch panel.

Note: Depending upon the model and boom width of the machine, there may be additional spade terminal pairs that will not be used. It is recommended to connect the spade connectors in the order shown in Table 1 on page 10, starting with the far left section as boom number 1.

Each male spade connector also has a short, red jumper wire tied to the lead wire. This jumper wire must be connected with the corresponding section switch to allow AccuBoom to control sections properly.

Note: While connecting the AccuBoom harness, work with only one section switch and one pair of leads at a time to help ensure that the leads are connected to the correct switch and switch receptacle connected.

1. On the first switch (switch for the furthest left section), disconnect the switch and switch receptacle on the back side of the switch panel. Note the orientation of the switch receptacle in relation to the switch.
2. Locate the AccuBoom harness leads for the first section (refer to Table 1 on page 10).
3. Connect the female spade connectors to the pins on the back of the switch (refer to Table 1 on page 10).
4. Insert the male spade connectors into the switch receptacle (refer to Table 1 on page 10).
5. Repeat step 1 through step 4 to connect the AccuBoom harness leads to the remaining switches.

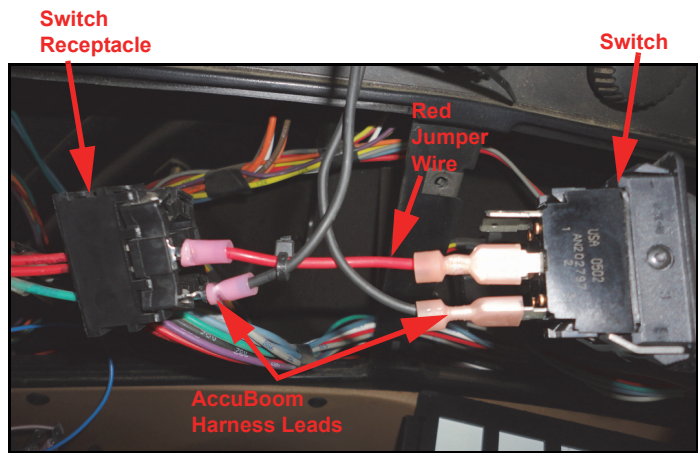


TABLE 1. AccuBoom Harness Connections

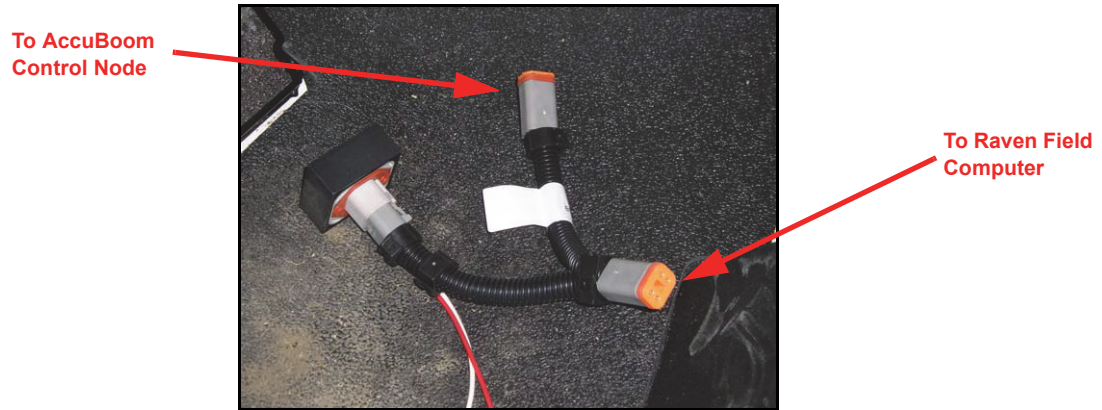
Section Number	AccuBoom Harness Leads	Switch Receptacle	Section Switch
1	Black - Female Black - Male Red Jumper Wire	Boom 1 - Pin 3 Boom 1 - Pin 2	Boom 1 - Pin 3 Boom 1 - Pin 2
2	Brown - Female Brown - Male Red Jumper Wire	Boom 2 - Pin 3 Boom 2 - Pin 2	Boom 2 - Pin 3 Boom 2 - Pin 2
3	Blue - Female Blue - Male Red Jumper Wire	Boom 3 - Pin 3 Boom 3 - Pin 2	Boom 3 - Pin 3 Boom 3 - Pin 2
4	Black/White - Female Black/White - Male Red Jumper Wire	Boom 4 - Pin 3 Boom 4 - Pin 2	Boom 4 - Pin 3 Boom 4 - Pin 2
5	Brown/White - Female Brown/White - Male Red Jumper Wire	Boom 5 - Pin 3 Boom 5 - Pin 2	Boom 5 - Pin 3 Boom 5 - Pin 2
6	Blue/White - Female Blue/White - Male Red Jumper Wire	Boom 6 - Pin 3 Boom 6 - Pin 2	Boom 6 - Pin 3 Boom 6 - Pin 2
7	White/Black - Female White/Black - Male Red Jumper Wire	Boom 7 - Pin 3 Boom 7 - Pin 2	Boom 7 - Pin 3 Boom 7 - Pin 2

6. Carefully replace the switch panel, retaining plate, and retaining screw to secure the switch panel.
7. Replace and secure the access panel.

CANbus Connection

1. Locate the CAN terminator (P/N 063-0172-369) or 4-pin Deutsch connectors in the implement cabin. If the Raven system will only be used for AccuBoom section control, the supplied 4-pin tee cable will need to be connected to a power tee cable.

FIGURE 4. 4-Pin Connectors on CANbus Power Tee



2. Connect the single connector on the supplied CAN tee cable (P/N 115-0171-326) to an available 4-pin Deutsch connector.
3. Route the CAN tee cable to the AccuBoom node harness and connect to the 4-pin connector labeled 'To CANbus' located near the AccuBoom node.
4. Install the CAN terminator onto the remaining branch connector.

Connect the Harness to the AccuBoom Node

1. Insert the rectangular connectors on the AccuBoom harness (P/N 115-1001-021) into the AccuBoom control node (P/N 063-0172-316).
2. Use a nut driver to secure the connectors to the node.

Power Connections

1. Locate the auxiliary power strip on the front of the console on the right side of the operator cabin.

FIGURE 5. Auxiliary Power Strip



2. Connect the high-current power and ground (12 gauge red and white leads) to live power on the auxiliary power strip.
3. Connect the logic power and ground (16 gauge red and white leads) to switched power (separate ports) on the auxiliary power strip.

Note: Use two separate ports on the auxiliary power strip when connecting high current and logic power and ground. The CANbus power tee red and white leads may be connected to the same port as the logic power and ground connections if necessary.

CHAPTER

4

***Section Mapping
Setup***

This section contains mapping settings that are used to program the AccuBoom controller. Refer to the Installation & Operation Manual and the appropriate section in this chapter for the specific field computer being used for programing instructions and section mapping settings.

Envizio Pro

7 Section	
Boom	Section Label
1	1
2	2
3	3
4	4
5	5
6	6
7	7

Viper Pro

7 Section		
Boom	Wired As	Displayed As
1	1	1
2	2	2
3	3	3
4	4	4
5	5	5
6	6	6
7	7	7

CHAPTER

5

Troubleshooting

The AccuBoom CAN control node (P/N 063-0172-316) features several green light-emitting diodes (LEDs) which may be used to diagnose issues within the AccuBoom system.

Note: If the LEDs are not displayed as outlined in the figure below, check the CAN connections and the control cable connections on the node. If the issue persists, contact your local Raven dealer for additional technical support.

Note: All boom switches must remain in the OFF position while AccuBoom control is in operation.

FIGURE 1. AccuBoom CAN Control Node LEDs



A

AccuBoom Kit Contents 5

I

Important Safety Information 1

Introduction 3

Kit Contents 5

Point of Reference 4

Recommendations 3

Tools Needed 4

S

Section Mapping Setup

Envizio Pro 13

Viper Pro 14

U

Updates 4

RAVEN

Limited Warranty

What Does this Warranty Cover?

This warranty covers all defects in workmanship or materials in your Raven Applied Technology Division product under normal use, maintenance, and service when used for intended purpose.

How Long is the Coverage Period?

Raven Applied Technology products are covered by this warranty for 12 months from the date of retail sale. In no case will the Limited Warranty period exceed 24 months from the date the product was issued by Raven Industries Applied Technology Division. This warranty coverage applies only to the original owner and is non-transferable.

How Can I Get Service?

Bring the defective part and proof of purchase to your Raven dealer. If the dealer approves the warranty claim, the dealer will process the claim and send it to Raven Industries for final approval. The freight cost to Raven Industries will be the customer's responsibility. The Return Materials Authorization (RMA) number must appear on the box and all documentation (including proof of purchase) must be included inside the box to be sent to Raven Industries.

What Will Raven Industries Do?

Upon confirmation of the warranty claim, Raven Industries will (at our discretion) repair or replace the defective product and pay for the standard return freight, regardless of the inbound shipping method. Expedited freight is available at the customer's expense.

What is not Covered by this Warranty?

Raven Industries will not assume any expense or liability for repairs made outside our facilities without written consent. Raven Industries is not responsible for damage to any associated equipment or products and will not be liable for loss of profit, labor, or other damages. The obligation of this warranty is in lieu of all other warranties, expressed or implied, and no person or organization is authorized to assume any liability for Raven Industries.

Damages caused by normal wear and tear, misuse, abuse, neglect, accident, or improper installation and maintenance are not covered by this warranty.



Extended Warranty

What Does this Warranty Cover?

This warranty covers all defects in workmanship or materials in your Raven Applied Technology Division product under normal use, maintenance, and service when used for intended purpose.

Do I Need to Register My Product to Qualify for the Extended Warranty?

Yes. Products/systems must be registered within 30 days of retail sale to receive coverage under the Extended Warranty. If the component does not have a serial tag, the kit it came in must be registered instead.

Where Can I Register My Product for the Extended Warranty?

To register, go online to www.ravenhelp.com and select Product Registration.

How Long is the Extended Warranty Coverage Period?

Raven Applied Technology products that have been registered online are covered for an additional 12 months beyond the Limited Warranty for a total coverage period of 24 months from the date of retail sale. In no case will the Extended Warranty period exceed 36 months from the date the product was issued by Raven Industries Applied Technology Division. This Extended Warranty coverage applies only to the original owner and is non-transferable.

How Can I Get Service?

Bring the defective part and proof of purchase to your Raven dealer. If the dealer approves the warranty claim, the dealer will process the claim and send it to Raven Industries for final approval. The freight cost to Raven Industries will be the customer's responsibility. The Return Materials Authorization (RMA) number must appear on the box and all documentation (including proof of purchase) must be included inside the box to be sent to Raven Industries. In addition, the words "Extended Warranty" must appear on the box and all documentation if the failure is between 12 and 24 months from the retail sale.

What Will Raven Industries Do?

Upon confirmation of the product's registration for the Extended Warranty and the claim itself, Raven Industries will (at our discretion) repair or replace the defective product and pay for the standard return freight, regardless of the inbound shipping method. Expedited freight is available at the customer's expense.

What is Not Covered by the Extended Warranty?

Raven Industries will not assume any expense or liability for repairs made outside our facilities without written consent. Raven Industries is not responsible for damage to any associated equipment or products and will not be liable for loss of profit, labor, or other damages. Cables, hoses, software enhancements, and remanufactured items are not covered by this Extended Warranty. The obligation of this warranty is in lieu of all other warranties, expressed or implied, and no person or organization is authorized to assume any liability for Raven Industries.

Damages caused by normal wear and tear, misuse, abuse, neglect, accident, or improper installation and maintenance are not covered by this warranty.