

RAVEN

AutoBoom™ Installation Manual



John Deere 4630

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CHAPTER

1

*Important Safety
Information*

NOTICE

Read this manual and the operation and safety instructions included with your implement and/or controller carefully before installing the AutoBoom™ 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 AutoBoom 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 AutoBoom, observe the following safety measures:

- Be alert and aware of surroundings.
- Do not operate AutoBoom 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 AutoBoom is engaged.
- Disable AutoBoom when exiting from the operator's seat and machine.
- Do not drive the machine with AutoBoom enabled on any public road.
- Determine and remain a safe working distance from other individuals. The operator is responsible for disabling AutoBoom when the safe working distance has diminished.
- Ensure AutoBoom is disabled prior to starting any maintenance work on AutoBoom or the machine.

 **WARNING**

- When starting the machine for the first time after installing AutoBoom, be sure that all persons stand clear, in case a hose has not been properly tightened.
- The machine must remain stationary and switched off, with the booms unfolded and supported, during installation or maintenance.

 **CAUTION**

Hydraulic Safety

- Raven Industries recommends that appropriate protective equipment be worn at all times when working on the hydraulic system.
- Never attempt to open or work on a hydraulic system with the equipment running. Care should always be taken when opening a system that has been previously pressurized.
- When disconnecting the hydraulic hoses or purging is required, be aware that the hydraulic fluid may be extremely hot and under high pressure. Caution must be exercised.
- Any work performed on the hydraulic system must be done in accordance with the machine manufacturer's approved maintenance instructions.
- When installing AutoBoom hydraulics or performing diagnostics, maintenance, or routine service, ensure that precautions are taken to prevent any foreign material or contaminants from being introduced into the machine's hydraulic system. Objects or materials that are able to bypass the machine's hydraulic filtration system will reduce performance and possibly damage the AutoBoom hydraulic valve.

Electrical Safety

- 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 AutoBoom system! This system is designed to provide automated boom height adjustment for agricultural equipment.

This manual applies to the following machines. For future reference, write your serial number in the space below.

MAKE: John Deere

MODEL: 4630

YEAR:

SERIAL NUMBER:

FIGURE 1. John Deere 4630



Note: *This manual contains the installation instructions for the UltraGlide systems. Be sure to identify which system you have and follow only the instructions for that system.*

Preparing for Installation

Before installing AutoBoom, 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 before installing or operating the AutoBoom system for the first time, at the start of the season, or when moving the AutoBoom system to another machine:

- Ensure the machine's hydraulic filters have been recently changed and there are no issues with the machine's hydraulic system (e.g., pump issues, faulty hydraulic motors, fine metal deposits in the hydraulic hoses, etc.).
- Operate each of the machine's boom hydraulic functions (i.e., tilt, fold, center rack, tongue extension, or other hydraulic valve functions) three times to ensure the machine's hydraulic valve is using fresh oil and debris is flushed from the hydraulic hoses, valves, and filters.
- Upon installation of the AutoBoom system, operate the boom and center rack raise/lower functions through the machine's manual control functions first before operating them via the AutoBoom controller/field computer to ensure the hydraulic system has been installed correctly and air is released from the system.

Raven Industries recommends the following best practices when installing the AutoBoom system.

- Use part numbers to identify the parts.
- Do not remove the plastic wrap from a part until it is necessary for installation.
- Do not remove plastic caps from a part until it is necessary for installation.

Tools Needed

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

- SAE standard-sized wrenches
- Cable ties
- Set of tools

Point of Reference

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

Hydraulic Fittings

This manual may reference the following types of hydraulic fittings:

- SAE O-ring fittings
- ORFS (O-Ring Face Seal) fittings
- JIC fittings

SAE O-ring fitting



ORFS fitting



JIC fitting (M)



UltraGlide Kit Contents

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

TABLE 1. UltraGlide Installation Kit (P/N 117-0232-100)






Picture	Item Description	Part Number	Qty.
Not Pictured	Manual - John Deere 4630 AutoBoom Installation	016-0230-100	1
	Valve - UltraGlide AutoBoom	063-0131-124	1
	Plate - Hydraulic Block Mounting	107-0171-802	1
	Sensor - Right Ultrasonic	063-0130-012	1
	Sensor - Left Ultrasonic	063-0130-014	1
	Sensor - Center Ultrasonic	063-0130-018	1

TABLE 1. UltraGlide Installation Kit (P/N 117-0232-100)








Picture	Item Description	Part Number	Qty.
	Cable - John Deere Center Rack Control Up Boom Sense Adapter	115-0230-048	1
	Cable - John Deere Center Rack Control Down Boom Sense Adapter	115-0230-049	1
	U-Bolt - 2" W x 3" L x 3/8" Thread	107-0171-609	4
	Bolt - 5/16"-18 x 7/8" Hex	311-0052-104	4
	Bolt - 3/8"-16 x 1-1/4" Zinc Hex	311-0054-106	7
	Nut - 3/8"-16 Zinc Flanged Lock	312-1001-164	15
	Washer - 5/16" Zinc Plated Lock	313-1000-019	4

TABLE 2. Boom Sense Adapter Kit (P/N 117-0131-009)



Picture	Item Description	Part Number	Qty.
	Cable - Left Up Boom Sense Adapter	115-0171-254	1
	Cable - Left Down Boom Sense Adapter	115-0171-622	1

TABLE 2. Boom Sense Adapter Kit (P/N 117-0131-009)



Picture	Item Description	Part Number	Qty.
	Cable - Right Down Boom Sense Adapter	115-0171-623	1
	Cable - Right Up Boom Sense Adapter	115-0171-624	1

TABLE 3. Hydraulic Kit (P/N 117-0134-100)

Picture	Item Description	Part Number	Qty.
	Fitting - 13/16" ORFS M/M/F Swivel Run Tee	333-0012-028	2
	Fitting - 11/16" ORFS M/F 90° Swivel Elbow	333-0012-065	2
	Fitting - 11/16" ORFS (M) to 9/16" SAE O-Ring (M) Straight Adapter	333-0012-084	6
	Fitting - 11/16" ORFS (M) to 3/4" SAE O-Ring (M) Straight Adapter	333-0012-199	2
	Hydraulic Hose - 11/16" ORFS (F) to 11/16" ORFS (F) - 80"	214-1000-649	1
	Hydraulic Hose - 11/16" ORFS (F) to 11/16" ORFS (F) - 90"	214-1000-650	1
	Hydraulic Hose - 11/16" ORFS (F) to 13/16" ORFS (F) 90° - 60"	214-1000-651	2

TABLE 3. Hydraulic Kit (P/N 117-0134-100)



Picture	Item Description	Part Number	Qty.
	Hydraulic Hose - 11/16" ORFS (F) to 11/16" ORFS (F) 90° - 130"	214-1000-652	1
	Hydraulic Hose - 11/16" ORFS (F) to 11/16" ORFS (F) 90° - 120"	214-1000-653	1

TABLE 4. Ultrasonic Sensor Bracket Installation Kit (P/N 117-0131-082)





Picture	Item Description	Part Number	Qty.
Not Pictured	Sheet - AutoBoom Sensor Extension	016-0130-070	1
	Bracket - 12" S-Type AutoBoom Sensor	063-0131-592	2
	Bolt - 5/16"-18 x 1-1/4" Hex	311-0052-106	2
	Nut - 5/16"-18 Nylon Insert Lock	312-4000-059	2
	Washer - 5/16" Zinc Flat	313-2300-012	4

TABLE 5. Optional Wheel Kit (P/N 117-0133-100)



Picture	Item Description	Part Number	Qty.
	Axle Assembly - Right Cushioned AutoBoom	063-0131-585	1
	Axle Assembly - Left Cushioned AutoBoom	063-0131-590	1

TABLE 5. Optional Wheel Kit (P/N 117-0133-100)

Picture	Item Description	Part Number	Qty.
	Bracket - Weldment Receiver	116-0159-548	2
	Bracket - Hub Retainer	107-0171-617	2
	Wheel	322-0131-008	2
	U-Bolt - 2" W x 3" L x 3/8" Thread	107-0171-609	4
	Bolt - 1/2"-13 x 1-1/2" SS Hex	311-0058-186	4
	Nut - 1/2"-13 Zinc Hex	312-1001-043	4
	Nut - 3/8"-16 Zinc Flanged Lock	312-1001-164	8

TABLE 6. UltraGlide Wiring Kit (P/N 117-0137-024)



Picture	Item Description	Part Number	Qty.
Not Pictured	Manual - AutoBoom Calibration & Operation	016-0130-062	1
	Node - UltraGlide AutoBoom	063-0130-013	1
	Cable - Sensor	115-0171-527	2

TABLE 6. UltraGlide Wiring Kit (P/N 117-0137-024)







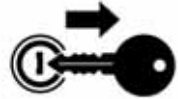

	Cable - Harness	115-0230-045	1
	Cable - Power/CAN Controller	115-0230-007	1

TABLE 7. ISO CAN PowerGlide Plus Wiring Kit (P/N 117-0137-042)


Item Picture	Item Description	Part Number	Quantity
Not Pictured	Manual, Calibration and Operation	016-0130-078	1
	Node, ISO CAN Control, AutoBoom	063-0130-016	1
Not Pictured	Cable, 70' Extension, Ultrasonic Sensor	115-0171-527	1
	Cable, Adapter, ISO CANbus Terminator	115-0230-024	1
	Cable, ISO CAN AutoBoom, JD SP Power Harness	115-0230-025	1
	Cable, ISO CAN Autoboom, JD SP Valve Connection	1155-0230-026	1


Installing the UltraGlide Hydraulic System

⚠ WARNING

The machine must remain stationary and switched off, with the booms unfolded and supported, during installation or maintenance.







CAUTION

When installing AutoBoom hydraulics or performing diagnostics, maintenance, or routine service, ensure precautions are taken to prevent any foreign material from being introduced into the machine's hydraulic system.

Objects or materials that are able to bypass the machine's hydraulic filtration system will reduce performance and possibly damage the AutoBoom hydraulic valve.





NOTICE

The appearance of the AutoBoom hydraulic valve may vary slightly from the images contained in this manual. However, the fittings, hose connections, and cable connections remain the same.

Install Fittings on the AutoBoom Valve

Before mounting the AutoBoom valve on the machine, install the proper fittings on the valve. This prepares the valve for installation and simplifies the hose connection process later in the procedure. Refer to the following table to install the fittings in the appropriate ports of the AutoBoom valve.

Fitting	Part Number	Port
Fitting - 11/16" ORFS (M) to 9/16" SAE O-Ring (M) Straight Adapter	333-0012-084	LC, RC, LV, RV
Fitting - 11/16" ORFS (M) to 3/4" SAE O-Ring (M) Straight Adapter	333-0012-199	P, T
Fitting - 11/16" ORFS M/F 90° Swivel Elbow	333-0012-065	P, T

Mount the AutoBoom Valve

FIGURE 1. AutoBoom Valve Mounted on the Machine



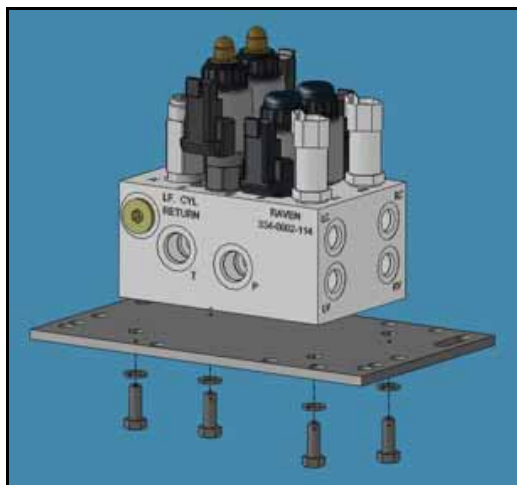
Note: The point of reference for this procedure assumes you are looking at the center rack from the direction of the sprayer's cab.

1. Using the valve mounting plate (P/N 107-0171-802) as a guide, drill three holes in the left-front vertical support channel of the machine's center rack.

Note: Position the plate so that, when the valve is mounted, the LV, RV, LC, and RC ports face up.


2. Mount the valve mounting plate on the center rack using three 3/8"-16 x 1-1/4" hex bolts (P/N 311-0054-106) and three 3/8"-16 zinc flanged lock nuts (P/N 312-1001-164).

FIGURE 2. AutoBoom Valve Mounted to the Valve Mounting Plate



3. Secure the AutoBoom valve (P/N 063-0131-124) to the valve mounting plate using four 5/16"-18 x 7/8" hex bolts (P/N 311-0052-104) and four 5/16" zinc lock washers (P/N 313-1000-019).

Install the Pressure and Tank Hoses

	<p>⚠ WARNING</p> <p>Hydraulics are under pressure. Care should always be taken with a system that has been pressurized. When disconnecting or purging hydraulic hoses, be aware that the hydraulic fluid within the machine's system may be extremely hot and under high pressure.</p>
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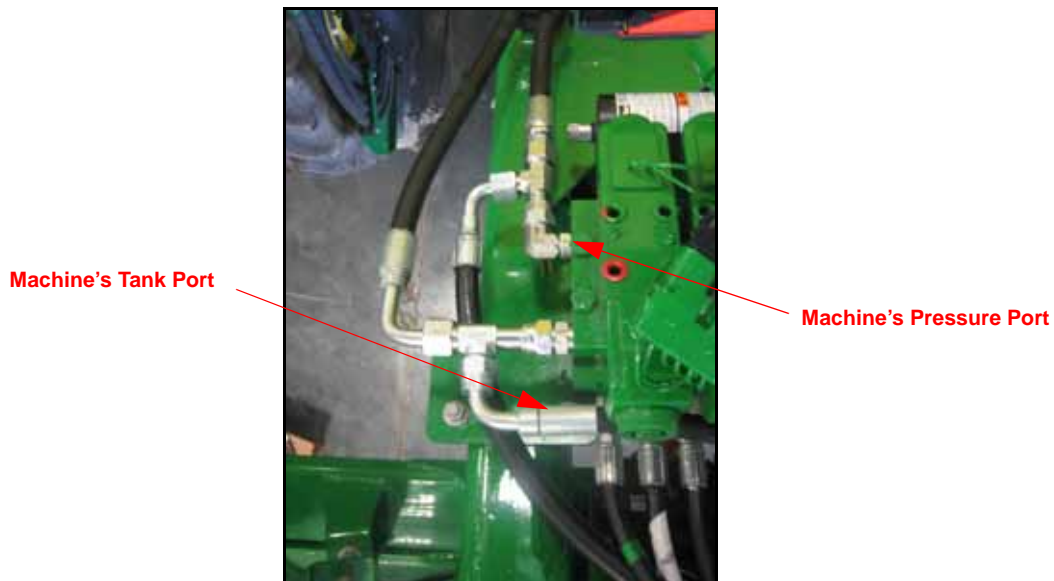
	<p>⚠ CAUTION</p> <p>When installing AutoBoom hydraulics or performing diagnostics, maintenance, or routine service, ensure precautions are taken to prevent any foreign material from being introduced into the machine's hydraulic system.</p> <p>Object or materials that are able to bypass the machine's hydraulic filtration system will reduce performance and possibly damage the AutoBoom hydraulic valve.</p>
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FIGURE 3. Pressure and Tank Hoses Installed on the Machine



1. Disconnect the machine's pressure hose from the left side of the machine's hydraulic valve.
2. Install a 13/16" ORFS M/M/F swivel run tee fitting (P/N 333-0012-028) in the machine's pressure port.
3. Connect the machine's pressure hose to the opposite end of the installed tee fitting.
4. Install the 90° end of the supplied hydraulic hose (P/N 214-1000-651) on the 90° end of the installed tee fitting.
5. Connect the straight end of the hydraulic hose to the 90° fitting installed in Port P of the AutoBoom valve.

6. Disconnect the machine's tank hose from the left side of the machine's hydraulic valve.
7. Install a 13/16" ORFS M/M/F swivel run tee fitting (P/N 333-0012-028) in the machine's tank port.
8. Connect the machine's tank hose to the opposite end of the installed tee fitting.
9. Install the 90° end of the supplied hydraulic hose (P/N 214-1000-651) on the 90° end of the tee fitting.
10. Connect the straight end of the installed hydraulic hose to the 90° fitting installed in Port T of the AutoBoom valve.

Install the Left and Right Cylinder Hoses

FIGURE 4. Cylinder Hoses Installed

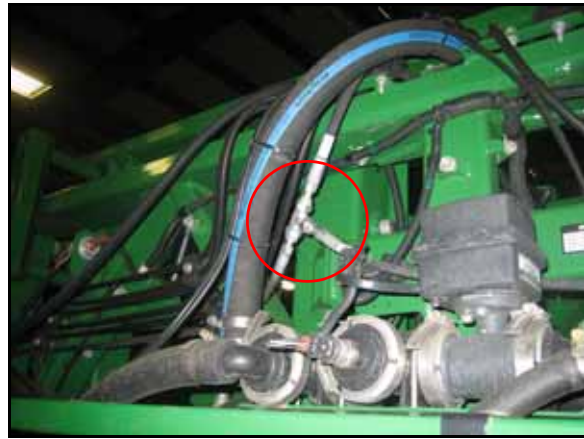


Note: The 90° fittings in Ports LV and RV as shown in the figure above are not necessary if the valve is mounted with those ports facing up.

1. Disconnect the machine's left cylinder raise hose from the rod-end of the left tilt cylinder.
2. Route and connect the machine's left cylinder raise hose to the installed fitting in Port LV of the AutoBoom valve.
3. Connect one end of the supplied hydraulic hose (P/N 214-1000-653) to the fitting installed in Port LC of the AutoBoom valve.
4. Route the installed hydraulic hose back to the left tilt cylinder and connect it to the cylinder raise port (rod-end of the left tilt cylinder) .
5. Disconnect the machine's right cylinder raise hose from the rod-end of the right tilt cylinder.
6. Route and connect the machine's right cylinder raise hose to the installed fitting in Port RV of the AutoBoom valve.
7. Connect one end of the supplied hydraulic hose (P/N 214-1000-652) to the fitting installed in Port RC of the AutoBoom valve.
8. Route the installed hydraulic hose back to the right tilt cylinder and connect it to the cylinder raise port (rod-end of the tilt cylinder).

Install the Left and Right Down Hoses

FIGURE 5. Down Hoses Installed



1. Disconnect the machine's left down hose from the base-end of the left tilt cylinder.
2. Disconnect the other end of the left down hose from the existing tee fitting at the back of the sprayer, near the boom valves.

Note: *Keep the hose for future use.*

3. Remove the machine's cylinder fitting from the tilt cylinder.

Note: *Keep the fitting for future use.*

4. Install a 9/16" SAE O-ring (M) to 11/16" ORFS (M) straight adapter fitting (P/N 333-0012-084) in the open cylinder port.
5. Install one end of the supplied hydraulic hose (P/N 214-1000-649) to the installed fitting in the base-end of the left tilt cylinder.
6. Connect the other end of the installed hydraulic hose to the open branch of the machine's tee fitting.
7. Disconnect the machine's right down hose from the base-end of the right tilt cylinder.
8. Disconnect the other end of the right down hose from the existing tee fitting at the back of the sprayer, near the boom valves.

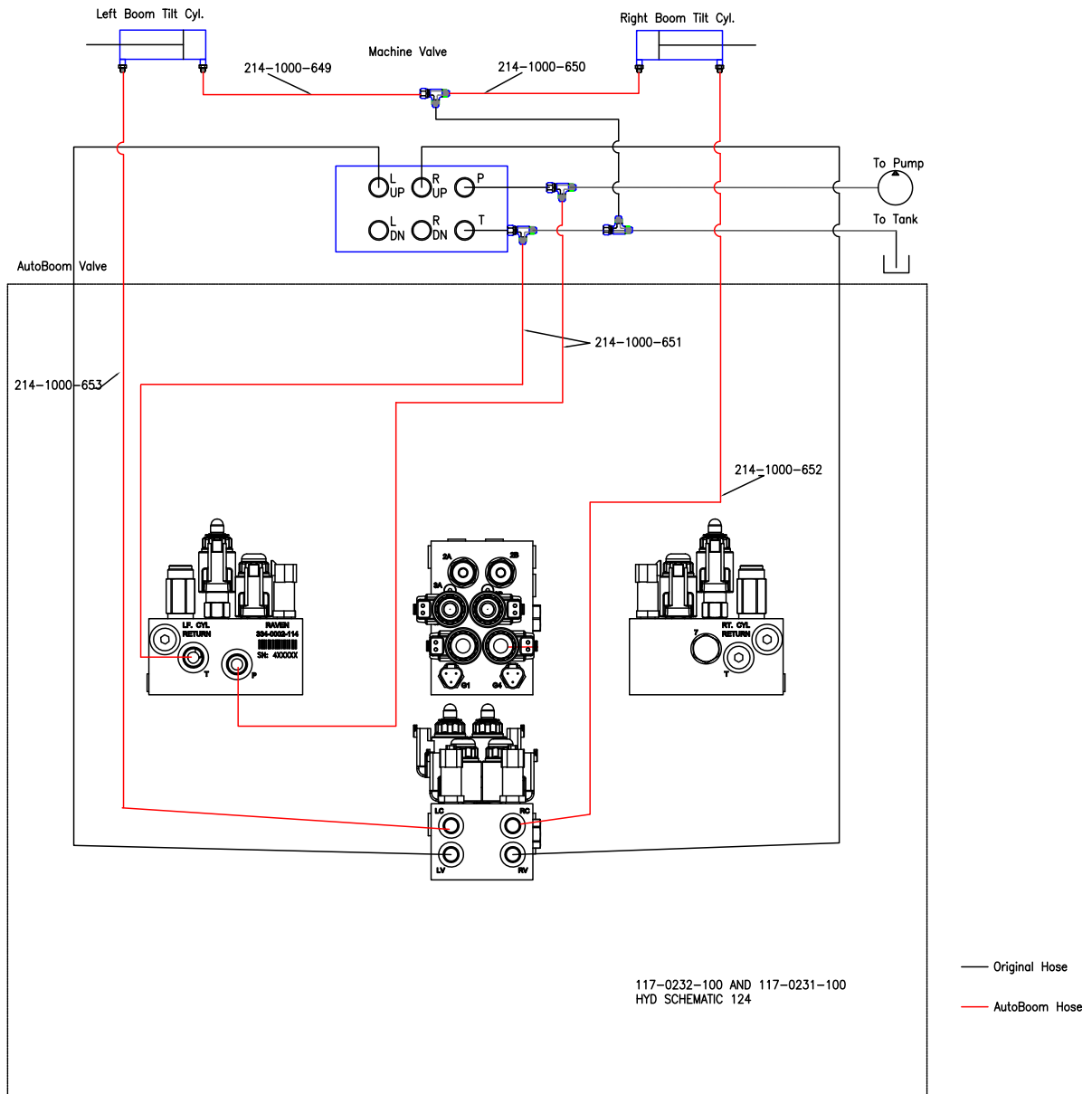
Note: *Keep the hose for future use.*

9. Remove the machine's cylinder fitting from the tilt cylinder.

Note: *Keep the fitting for future use.*

10. Install a 9/16" SAE O-ring (M) to 11/16" ORFS (M) straight adapter fitting (P/N 333-0012-084) in the open cylinder port.
11. Install one end of the supplied hydraulic hose (P/N 214-1000-650) to the installed fitting in the base-end of the right tilt cylinder.
12. Connect the other end of the installed hydraulic hose to the open branch of the machine's tee fitting.

Hydraulic Schematic

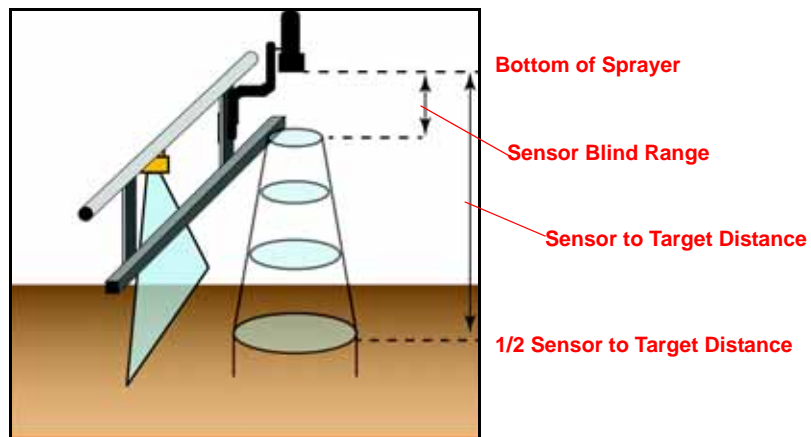


Install the UltraGlide Sensors

Boom Sensor Mounting Locations

Sensor mounting locations may be influenced by the boom configuration. If an object enters the sensor's blind range unexpectedly, a false echo return to the sensor could occur, causing the boom to drop and the sensor or boom to be damaged. To ensure optimal operation of the UltraGlide system and to protect the sprayer boom, the sensors should be mounted on the front side of the boom, 8 - 10" above the lowest hanging part of the boom.

FIGURE 6. Illustration of Sensor's Blind Range



Mount the Boom Sensors

	<p>WARNING</p> <p>The machine must remain stationary and switched off, with the booms unfolded and supported, during installation or maintenance.</p>
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FIGURE 7. Mounted Boom Sensor



1. Locate the left and right ultrasonic sensors (P/N 063-0130-012 and 063-0130-014) in the AutoBoom installation kit.
2. Remove the sensor from the existing plastic arm.
3. Install the sensors on the 12" S-type sensor arms (P/N 063-0131-592) using the supplied 5/16"-18 x 1-1/4" bolts (P/N 311-0052-106), 5/16"-18 nylon insert lock nuts (P/N 312-4000-059) and 5/16" zinc flat washers (P/N 313-2300-012).
4. Mount the left sensor (P/N 063-0130-014) to the front of the left boom using two 2" W x 3" L x 3/8" thread U-bolts (P/N 107-0171-609) and four 3/8"-16 zinc flanged lock nuts (P/N 312-1001-164).
5. Tighten the nuts to ensure the sensor is mounted securely.
6. Repeat the steps above to mount the remaining boom sensor(s).

Mount the Center Rack Sensor

FIGURE 8. Mounted Center Rack Sensor



1. Using the mounting holes in the sensor as a guide, drill two holes at the bottom of the vertical support rail of the machine's center rack.
2. Mount the center sensor (P/N 063-0130-018) to the machine's center rack using two 3/8"-16 UNC x 1-1/4" zinc plated hex bolts (P/N 311-0054-106) and two 3/8"-16 zinc flanged lock nuts.
3. Tighten the nuts to ensure the sensor is mounted securely.

Connect the Sensor Cables

1. Connect the left sensor cable (P/N 115-0171-527) to the connector on the left sensor.
2. Route the sensor cable toward the AutoBoom valve.
3. Loop and tie-off any excess cable, allowing enough cable for boom folding and extension.
4. Repeat the steps above to connect the remaining boom sensor cable(s).

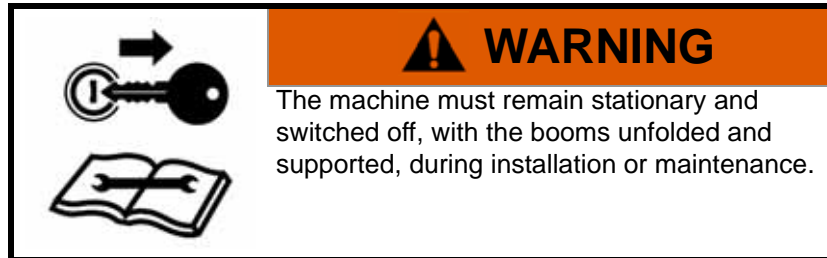
Note: *The sensor cables will be connected to the AutoBoom system in the wiring phase of installation.*

Install the Gauge Wheels - Optional

Gauge Wheel Mounting Locations

Wheel mounting locations may be influenced by the boom configuration. Determine the appropriate location for mounting the wheels on the boom, ensuring the wheels will not interfere with or be damaged while folding or unfolding the booms.

Mount the Gauge Wheels



Note: The appearance of the wheel axles may vary.

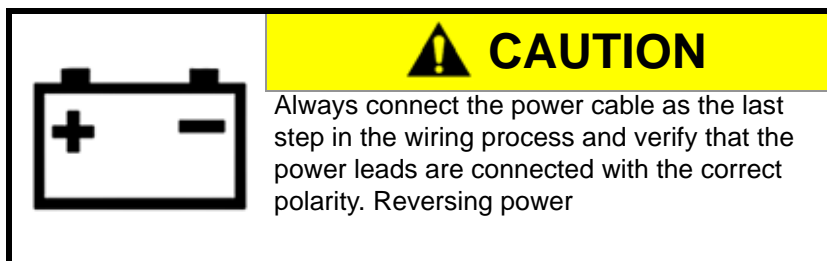
FIGURE 9. Gauge Wheel Installed



1. Remove the nuts from the left wheel axle (P/N 063-0131-590).
2. Place the wheel (P/N 322-0131-008) on the right wheel axle.
3. Align and place the hub retainer bracket (P/N 107-0171-617) over the wheel.
4. Reinstall the lug nuts on the wheel axle to secure the wheel and hub retainer bracket.
5. Secure the left wheel mounting bracket (P/N 116-0159-548) to the front of the right boom using two 2" W x 3" L x 3/8" thread U-bolts (P/N 107-0171-609) and four 3/8"-16 zinc flanged lock nuts (P/N 312-1001-164).
6. Insert the left wheel axle into the wheel mounting bracket, positioning it so that the bottom of the wheel touches the ground (or nearly so) and the wheel faces away from the machine.
7. Secure the gauge wheel assembly in the wheel mounting bracket by installing two 1/2"-13 x 1-1/2" SS hex bolts (P/N 311-0058-186) and two 1/2" zinc hex nuts (P/N 312-1001-043).
8. Repeat the steps above to install the right wheel.

Install the UltraGlide Wiring

Wiring Connections



For wiring connections made outside the cab, apply dielectric silicone grease (P/N 222-0000-006) generously on both the male and female ends of the connectors. Application of the grease will prevent corrosion to the pins and wires.

Install the AutoBoom Node

FIGURE 10. AutoBoom Node Installed



1. Mount the AutoBoom node (P/N 063-0130-013 or 063-0130-016) to the valve mounting plate (P/N 107-0171-802) above the AutoBoom valve using two 3/8"-16 x 1-1/2" SS hex bolts (P/N 311-0054-106) and two 3/8"-16 zinc flanged lock nuts (P/N 312-1001-164).

Note: Position the node so that the cable connectors face down or to the side.

2. Insert the large, rectangular node connectors on the AutoBoom harness cable (P/N 115-0230-045, 115-0230-085, or 115-0230-026) into the correct ports of the AutoBoom valve.
3. Tighten the bolts on the node connectors to secure the connection.

Connect the Harness to the Boom Function Controls

1. Locate the Left Press and Right Press connectors on the AutoBoom harness cable (P/N 115-0230-045, 115-0230-085, or 115-0230-026).
2. Route the connectors to the AutoBoom valve (P/N 063-0131-124).
3. Connect the Left Press connector to Port G1 on the AutoBoom valve.
4. Connect the Right Press connector to Port G4 on the AutoBoom valve.

5. Locate the Left Solenoid and Right solenoid connectors on the harness cable.
6. Connect the Left Solenoid connector to Port 4A on the AutoBoom valve.
7. Connect the Right Solenoid connector to Port 4B on the AutoBoom valve.
8. Locate the Left Prop and Right Prop connectors on the harness cable.
9. Connect the Left Prop connector to Port 5A on the AutoBoom valve.
10. Connect the Right Prop connector to Port 13A on the AutoBoom valve.

FIGURE 11. Machine's Boom Function Coils



11. Locate the machine's boom function coils on the machine's hydraulic valve.
12. Disconnect the connector from the machine's left tilt up coil.
13. Install the left up boom sense adapter cable (P/N 115-0171-254) between the coil and the machine's coil connector.
14. Disconnect the connector from the machine's left tilt down coil.
15. Install the left down boom sense adapter cable (P/N 115-0171-622) between the coil and the machine's coil connector.
16. Disconnect the connector from the machine's right tilt up coil.
17. Install the right up boom sense adapter cable (P/N 115-0171-624) between the coil and the machine's coil connector.
18. Disconnect the connector from the machine's right tilt down coil.
19. Install the right down boom sense adapter cable (P/N 115-0171-623) between the coil and the machine's coil connector.
20. On the harness cable, locate the Left Solenoid Sense connectors.
21. Isolate the connector labeled Up and connect it to the left tilt up coil via the installed boom sense adapter cable.
22. Connect the Left Solenoid Sense down connector to the left tilt down coil via the installed boom sense adapter cable.
23. Connect the Right Solenoid Sense connectors to the machine's right tilt up and down coils via the installed boom sense adapter cables.

Install the Center Rack Control

FIGURE 12. Machine's Center Boom Function Coils



1. Locate the center up coil on the machine's hydraulic valve.
2. Install the John Deere center rack control up boom sense adapter cable (P/N 115-0230-048) between the coil and its connector.
3. Locate the CTR Valve Up connector on the AutoBoom harness cable (P/N 115-0230-045, 115-0230-085, 115-0230-026) and plug it into the installed center rack control boom sense adapter cable.
4. Locate the CTR Sense Up connector on the harness cable and plug it into the connector that leads to the harness cable.
5. Locate the center down coil on the machine's hydraulic valve.
6. Install the John Deere center rack control down boom sense adapter cable (P/N 115-0230-049) between the coil and its connector.
7. Locate the CTR Valve Down connector on the harness cable and plug it into the installed center rack control boom sense adapter cable.
8. Locate the CTR Sense Down connector on the harness cable and plug it into the connector that leads to the harness cable.

Connect the Harness Cable to the Sensors

1. Locate the Center Sensor connector on the AutoBoom harness cable.
2. Connect the Center Sensor connector to the installed center sensor.
3. Locate the Left outer Sensor connector on the AutoBoom harness cable.
4. Connect the Left Outer Sensor connector to the installed left sensor cable (P/N 115-0171-527).
5. Locate the Right outer Sensor connector on the AutoBoom harness cable.
6. Connect the Right Outer Sensor connector to the installed right sensor cable.
7. If optional inside boom sensors are installed, repeat the steps above to connect the sensors.

Connect the Harness Cable to the Implement Extension Tee - Gen II Cable Only

1. Route the harness cable (P/N 115-0230-085) toward the implement extension tee cable.
2. Connect the harness cable to the TO NODE connector.
3. Remove the terminator from the machine's chassis harness of the stand alone console harness.
4. Install the terminator on the remaining open end of the implement extension tee cable.

5. Refer to the machine specific wiring schematic for extension tee cable routing.
6. Connect the extension tee cable.

Connect the Harness Cable to the Power Cable - Gen I Cable Only

1. Route the harness cable (P/N 115-0230-045) toward the machine's cab.

Note: *Be sure to allow enough slack in the harness cable to allow for boom racking.*

2. Connect the harness cable to the power cable (P/N 115-0230-007).
3. Tighten the connector screw cap to secure the connection.
4. Connect the red power lead on the power cable to the positive battery terminal.
5. Connect the white power lead on the power cable to the negative battery terminal.
6. Connect the single orange wire with the spade connector to a switched power source.
7. Make all necessary CAN connections. Keep in mind there should be only two CAN terminators in the system (one installed at each end of the CAN bus).

Connect the Controller (If Applicable) - Gen I Cable Only

1. Locate the two console connectors of the console cable (P/N 115-0230-005) and connect them to the AutoBoom Console (P/N 063-0130-021).

Note: *Mount the AutoBoom controller in the machine's cab so that the machine's operator has easy access to it.*

2. Install the CAN power tee (P/N 115-0171-368) between the CAN connectors of the console cable (P/N 115-0230-005) and the power cable (P/N 115-0230-007).
3. Install the CAN terminator (P/N 063-0172-369) on the remaining branch of the CAN power tee.
4. Connect the power leads of the CAN power tee to the battery.

ISO CAN Wiring Installation

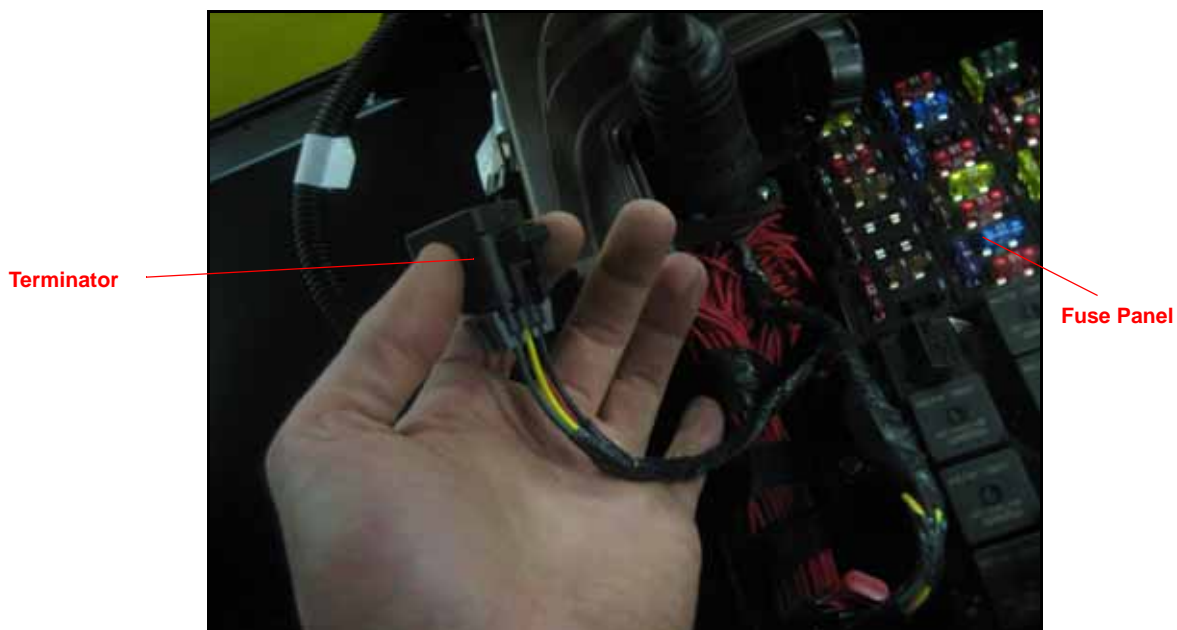
1. Feed the AutoBoom harness cable (P/N 115-0230-026) through the access plug hole in the left-rear corner of the cab.

FIGURE 13. Access Plug Hole



2. Locate the terminator near the fuse panel on the left side of the cab.

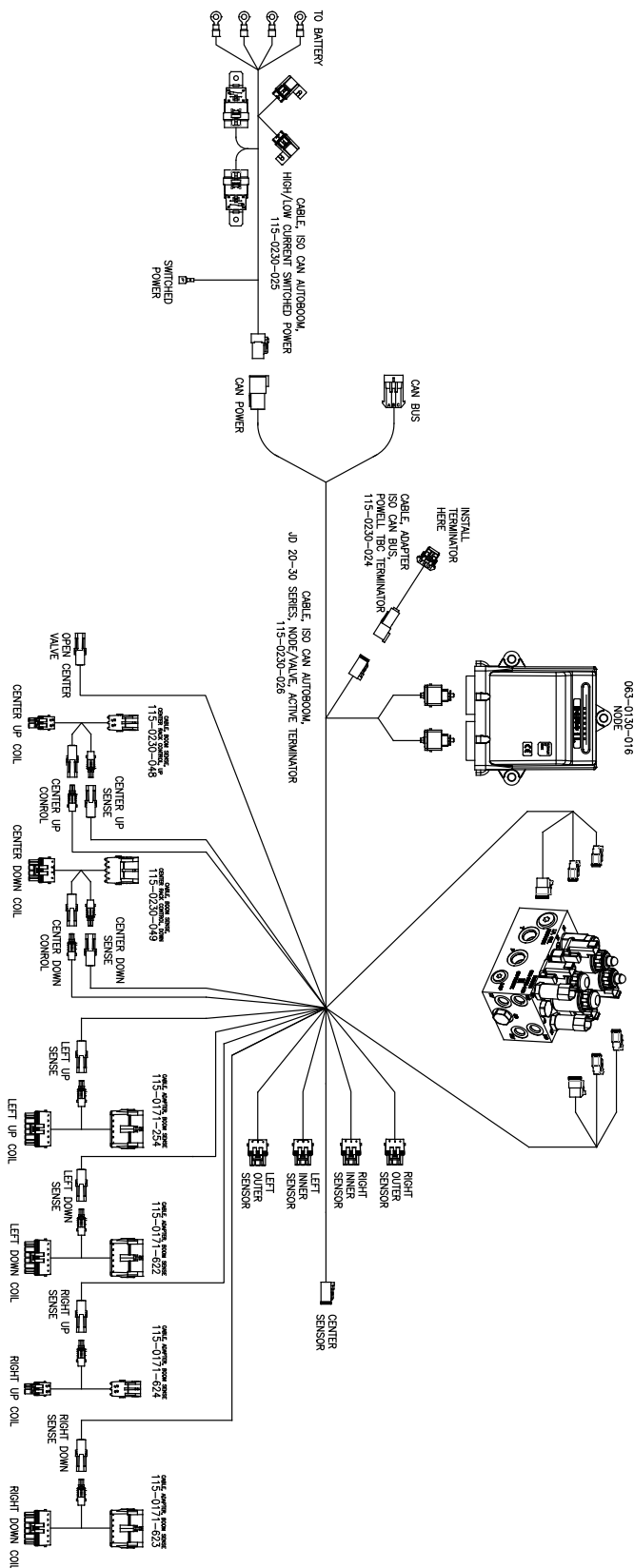
FIGURE 14. Terminator



3. Remove the terminator from the machine cable and connect the AutoBoom harness cable to the machine harness cable.
4. Connect the ISO CAN adapter cable (P/N 115-0230-024) to the CANbus connector on the AutoBoom harness cable (P/N 115-0230-026).
5. Install the terminator removed in step 3 to the ISO CAN adapter cable.
6. Connect the CAN power connector of the AutoBoom harness cable (P/N 115-0230-026) to the ISO power harness (P/N 115-0230-025).
7. Install the red power lead of the ISO power harness to the positive terminal on the battery.
8. Install the white power lead of the ISO power harness to the negative terminal on the battery.

9. Install the single orange wire with the spade connection to a switched power source.

ISO Wiring Schematic



Verify Static Pressure

It is necessary to remove orifice fittings from the valve in the UltraGlide system if the static pressures are below 1,000 psi. Failure to remove these fittings from the valve will restrict the down speed of the booms when the system is enabled.

Important: Do not remove the orifice fittings from the valve if the static pressures are over 1,000 psi!

FIGURE 15. Port 3A and 3B Location



1. Locate Ports 3A and 3B on the AutoBoom valve (P/N 063-0131-124).

FIGURE 16. Coil Removed from the AutoBoom Valve



2. Remove the coils from the solenoids near Ports 3A and 3B to gain easy access to those ports.

FIGURE 17. Port Plugs Removed from the AutoBoom Valve

3. Use an Allen wrench to remove the plugs from Ports 3A and 3B.

FIGURE 18. Orifice Fitting Removed from the AutoBoom Valve

Orifice Fitting
Removed - Keep for
Future Use

4. Remove the orifice fittings from Ports 3A and 3B.

Important: Tip the AutoBoom valve on its side and use the Allen wrench to remove the orifice from the cavity, taking care not to let the fitting fall into the valve.

FIGURE 19. Port Plug Reinstalled on the AutoBoom Valve

5. Use the Allen wrench to reinstall the port plugs on Ports 3A and 3B of the AutoBoom valve.

FIGURE 20. Coil Reinstalled on the AutoBoom Valve



6. Reinstall the coils on the solenoids of the AutoBoom valve.

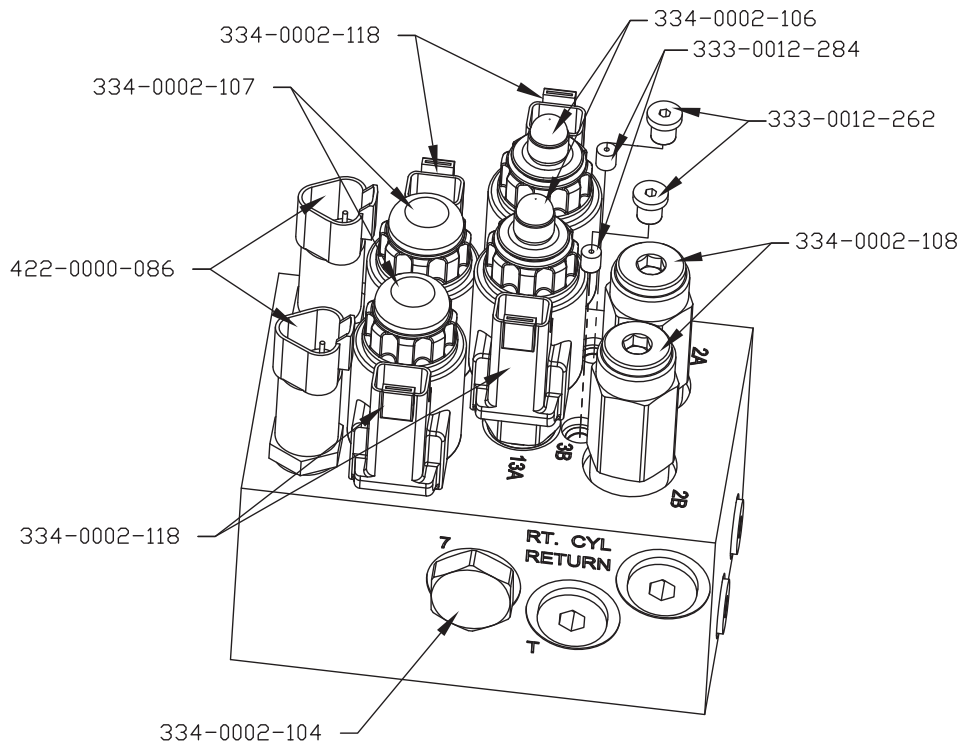
CHAPTER

4

Replacement Parts

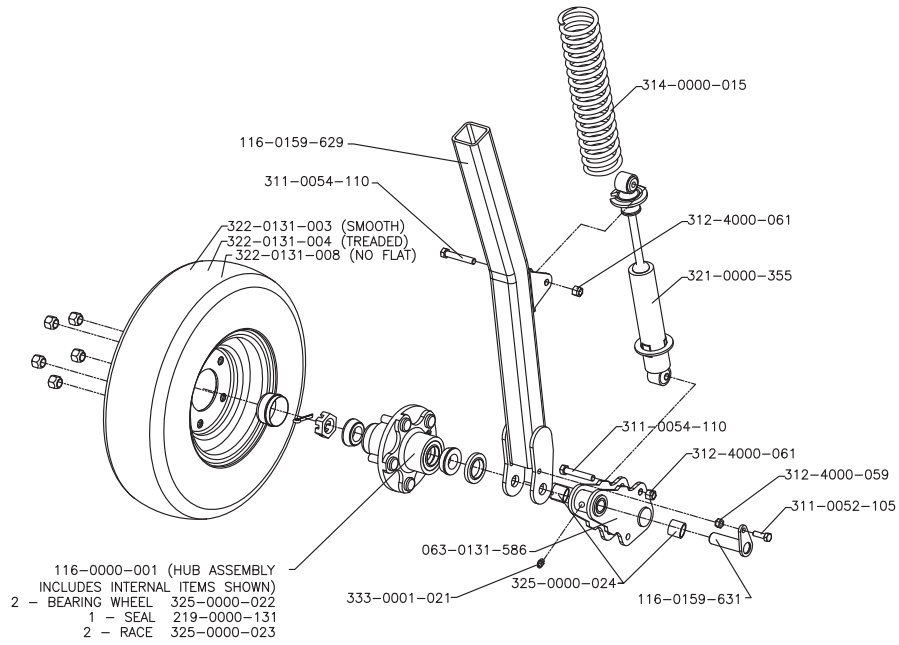
This section contains replacement part diagrams for PowerGlide Plus and UltraGlide systems. Please refer to these diagrams when calling to request replacement parts.

Valves

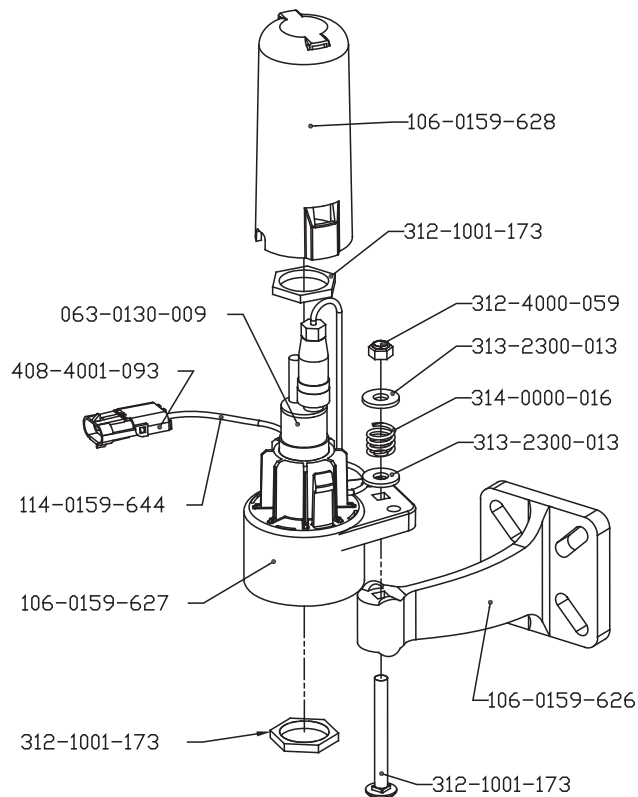


063-0131-124
VALVE, HYDRAULIC POWERGLIDE
PLUS/ULTRAGLIDE, CLOSED CENTER, AUTOBOOM

Wheels



Sensors



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.

RAVEN

John Deere 4630
AutoBoom™ Installation Manual
(P/N 016-0230-100 Rev C 01/15 E24070)



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