

RoGator 2009 & Newer AutoBoom[®] UltraGlide XT Installation Manual

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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 been 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, during installation or maintenance.

CAUTION

HYDRAULIC

GENERAL

- 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 SmarTrax 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 SmarTrax hydraulic valve.

INSTRUCTIONS FOR HOSE ROUTING

The word "hose" is used to mean all flexible fluid carrying components. Follow existing hoses as much as possible and use these guidelines:

Hoses should not contact or be attached to:

- Components with high vibration forces
- Components carrying hot fluids beyond component specifications

Avoid contact with any sharp edge or abrading surfaces such as, but not limited to:

- Sheared or flame cut edges
- Edges of machined surfaces
- Fastener threads or cap screw heads
- Ends of adjustable hose clamps

Routing should not allow hoses to:

- Hang below the unit
- Have the potential to become damaged due to exposure to the exterior environment. (i.e. tree limbs, debris, attachments)
- Be placed in areas of or in contact with machine components which develop temperatures higher than the temperature rating of hose components
- Hoses should be protected or shielded if it needs to route near hot temperatures beyond hose component specifications

Hoses should not have sharp bends

Allow sufficient clearance from machine component operational zones such as:

- Drive shafts, universal joints and hitches (i.e. 3-point hitch)
- Pulleys, gears, sprockets
- Deflection and backlash of belts and chains
- Adjustment zones of adjustable brackets
- Changes of position in SmarTrax and suspension systems
- Moving linkages, cylinders, articulation joints, attachments
- Ground engaging components

For hose sections that move during machine operation:

- Allow sufficient length for free movement without interference to prevent: pulling, pinching, catching or rubbing, especially in articulation and pivot points
- Clamp hoses securely to force controlled movement to occur in the desired hose section
- Avoid sharp twisting or flexing of hoses in short distances

Protect hoses from:

- Foreign objects such as rocks that may fall or be thrown by the unit
- Buildup of dirt, mud, snow, ice, submersion in water and oil
- Tree limbs, brush and debris
- Damage where service personnel or operators might step or use as a grab bar
- Damage when passing through metal structures
- High pressure wash

ELECTRICAL

GENERAL

- 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.
- A minimum of 12 VDC is required for system operation with a maximum of 15 VDC.

INSTRUCTIONS FOR WIRE ROUTING

The word "harness" is used to mean all electrical leads and cables, bundled and unbundled. When installing harness, secure it at least every 30 cm (12in) to the frame. Follow existing harness as much as possible and use these guidelines:

Harness should not contact or be attached to:

- Lines and hoses with high vibration forces or pressure spikes
- Lines and hoses carrying hot fluids beyond harness component specifications

Avoid contact with any sharp edge or abrading surfaces such as, but not limited to:

- Sheared or flame cut edges
- Edges of machined surfaces
- Fastener threads or cap screw heads

- Ends of adjustable hose clamps
- Wire exiting conduit without protection, either ends or side of conduit
- Hose and tube fittings

Routing should not allow harnesses to:

- Hang below the unit
- Have the potential to become damaged due to exposure to the exterior environment. (i.e. tree limbs, debris, attachments)
- Be placed in areas of or in contact with machine components which develop temperatures higher than the temperature rating of harness components
- Wiring should be protected or shielded if it needs to route near hot temperatures beyond harness component specifications

Harnessing should not have sharp bends

Allow sufficient clearance from machine component operational zones such as:

- Drive shafts, universal joints and hitches (i.e. 3-point hitch)
- Pulleys, gears, sprockets
- Deflection and backlash of belts and chains
- Adjustment zones of adjustable brackets
- Changes of position in SmarTrax and suspension systems
- Moving linkages, cylinders, articulation joints, attachments
- Ground engaging components

For harness sections that move during machine operation:

- Allow sufficient length for free movement without interference to prevent: pulling, pinching, catching or rubbing, especially in articulation and pivot points
- Clamp harnesses securely to force controlled movement to occur in the desired harness section
- Avoid sharp twisting or flexing of harnesses in short distances
- Connectors and splices should not be located in harness sections that move

Protect harnesses from:

- Foreign objects such as rocks that may fall or be thrown by the unit
- Buildup of dirt, mud, snow, ice, submersion in water and oil
- Tree limbs, brush and debris
- Damage where service personnel or operators might step or use as a grab bar
- Damage when passing through metal structures

IMPORTANT:

- Avoid directly spraying electrical components and connections with high pressure water. High pressure water sprays can penetrate seals and cause electrical components to corrode or otherwise become damaged. When performing maintenance:
- Inspect all electrical components and connections for damage or corrosion. Repair or replace components, connections, or cable as necessary.
- Ensure connections are clean, dry, and not damaged. Repair or replace components, connections, or cable as necessary.
- Clean components or connections using low pressure water, pressurized air, or an aerosol electrical component cleaning agent.

- Remove visible surface water from components, connections, or seals using pressurized air or an aerosol electrical component cleaning agent. allow components to dry completely before reconnecting cables.

CHAPTER

INTRODUCTION

2

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 machines listed below:

MAKE: AGCO RoGator

YEAR: 2009

MODEL: 884, SS884, 1084, 1084C, SS1084, SSC1084, and 1286C

YEAR: 2010-2011

MODEL: 984, 984H, 994, 994H, 1184, 1184H, 1194, 1194H, 1386, and 1396

YEAR: 2012-2017

MODEL: RG900, RG900B, RG1100, RG1100B, RG1300, and RG1300B

YEAR: 2018 & Newer

MODEL: RG900C, RG1100C, and RG1300C

FIGURE 1. AGCO RoGator RG1100



PREPARING FOR INSTALLATION

Before installing AutoBoom:

- Park the machine on dry, clean, and level land.
- Leave the machine off during the installation process.
- 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 or caps from parts until ready 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



UPDATES

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

<https://portal.ravenprecision.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

- RoGator 2009 & Newer AutoBoom® UltraGlide XT Installation Manual
- P/N 016-0233-005 Rev. F
- 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.



AUTOBOOM ULTRAGLIDE AND ULTRAGLIDE XT KIT CONTENTS

MODEL YEAR 2009

TABLE 1. AutoBoom UltraGlide and UltraGlide XT Kit Contents

Item Description	Part Number	2009 Gen I 117-0233-010 Qty.	2009 Gen I 117-0234-010 Qty.	2009 Gen II 117-0233-011 Qty.	2009 Gen II 117-0234-011 Qty.
Manual - AutoBoom Calibration and Operation	016-0130-062	1	1	1	1
Manual - RoGator UltraGlide XT Installation	016-0233-005	1	1	1	1

TABLE 1. AutoBoom UltraGlide and UltraGlide XT Kit Contents

Item Description	Part Number	2009 Gen I 117-0233-010 Qty.	2009 Gen I 117-0234-010 Qty.	2009 Gen II 117-0233-011 Qty.	2009 Gen II 117-0234-011 Qty.
Valve - AutoBoom Add-On Hydraulic	063-0131-131	1	N/A	1	N/A
Valve - Autoboom XT Hydraulic	063-0131-154	1	1	1	1
Node - UltraGlide XT	063-0130-023	1	1	1	1
Sensor - Left Ultrasonic	063-0130-014	1	1	1	1
Sensor - Ultrasonic Sensor	063-0130-026	4	N/A	4	N/A
Sensor - Rotary Non-Contact Con-X-All Connector	063-0181-018	1	1	1	1
Bracket - Hydraulic Valve Mounting	107-0171-619	1	N/A	1	N/A
Bracket - Rotary Sensor Mounting	107-0172-177	1	1	1	1
Bracket - Rotary Sensor Bolt Mounting	107-0172-178	1	1	1	1
Bracket - UltraGlide XT Valve Mount	107-0172-179	1	1	1	1

TABLE 1. AutoBoom UltraGlide and UltraGlide XT Kit Contents

Item Description	Part Number	2009 Gen I 117-0233-010 Qty.	2009 Gen I 117-0234-010 Qty.	2009 Gen II 117-0233-011 Qty.	2009 Gen II 117-0234-011 Qty.
Bracket - XT Rotary Sensor Mounting	107-0172-268	1	1	1	1
Bracket - XT Sensor Mounting	107-0172-349	1	1	1	1
Bracket - Ultrasonic Sensor Weldment Mounting	116-0159-684	1	1	1	1
Cable - 70' Sensor Extension	115-0171-527	2	2	2	2
Cable - AGCO RoGator Boom Sense Adapter	115-0171-546	4	N/A	4	N/A
Cable - 40' Sensor Extension	115-0171-602	2	2	2	2
Cable - AutoBoom Power	115-0233-007	1	N/A	N/A	N/A
Cable - Deutsch Center Rack Control Boom Sense Adapter	115-0230-039	2	N/A	2	N/A
Cable - 2-pin Deutsch Power Split	115-0230-070	1	N/A	1	N/A
Cable - UltraGlide XT Node Harness	115-0230-095	N/A	N/A	1	1

TABLE 1. AutoBoom UltraGlide and UltraGlide XT Kit Contents

Item Description	Part Number	2009 Gen I 117-0233-010 Qty.	2009 Gen I 117-0234-010 Qty.	2009 Gen II 117-0233-011 Qty.	2009 Gen II 117-0234-011 Qty.
Cable - UltraGlide XT Rotary Sensor	115-0230-110	1	1	1	1
Cable - UltraGlide XT Valve Harness	115-0230-116	1	1	N/A	N/A
Cylinder - 1.5" x 8" x 0.75" Hydraulic	334-0004-006	2	2	2	2
U-Bolt - 3-1/16" W x 4" L x 3/8" Thread	107-0171-608	2	2	2	2
U-Bolt - 1-9/16" W x 2-1/2" L x 3/8" Thread	107-0171-611	8	N/A	8	N/A
U-Bolt - 2-9/16" W x 3-1/2" L x 3/8" Thread	107-0171-616	4	2	4	2
U-Bolt - 3-1/16" W x 2-1/4" L x 3/8" - 16 Thread	107-0172-288	1	1	1	1
Bolt - 5/16"-18 x 1-3/4" Hex	311-0052-108	1	N/A	1	N/A
Bolt - 5/16"-18 x 2-1/2" Hex	311-0052-111	3	N/A	3	N/A
Bolt - 5/16"-18 UNC x 3" Machine	311-0052-113	2	2	2	2

TABLE 1. AutoBoom UltraGlide and UltraGlide XT Kit Contents

Item Description	Part Number	2009 Gen I 117-0233-010 Qty.	2009 Gen I 117-0234-010 Qty.	2009 Gen II 117-0233-011 Qty.	2009 Gen II 117-0234-011 Qty.
Bolt - 5/16"-18 UNC X 3-1/2" Machine	311-0052-115	1	1	1	1
Bolt - 3/8"-16 UNC 1-1/4" Machine	311-0054-081	7	4	7	4
Bolt - 1/2"-13 UNC x 3-1/2" Machine	311-0058-105	1	1	1	1
Bolt - 3/4"-10 UNC x 4" Machine	311-0062-160	4	4	4	4
Screw - #8-32" UNC 2 x 1/2" Phillips Panhead Machine	311-0001-013	3	3	3	3
Screw - #8-32" UNC x 1-1/4" Phillips Panhead Machine	311-0001-023	3	3	3	3
Nut - #8-32 UNC - 2B Hex	312-1001-020	6	6	6	6
Nut - 3/8"-16 Zinc Flanged Lock	312-1001-164	34	14	34	14
Nut - 5/16"-18 Nylon Insert Lock	312-4000-059	3	3	3	3
Nut - 3/8"-16 Nylon Insert Lock	312-4000-061	3	N/A	3	N/A

TABLE 1. AutoBoom UltraGlide and UltraGlide XT Kit Contents

Item Description	Part Number	2009 Gen I 117-0233-010 Qty.	2009 Gen I 117-0234-010 Qty.	2009 Gen II 117-0233-011 Qty.	2009 Gen II 117-0234-011 Qty.
Nut - 1/2"-13 Nylon Insert Lock	312-4000-065	1	1	1	1
Nut - 3/4"-10 Nylon Insert Lock	312-4000-071	4	4	4	4
O-Ring - 9/16" ID Buna-N	219-0001-015	4	N/A	4	N/A
Washer - 5/16" Flat	313-2300-011	8	8	8	8
Washer - 1/2" Flat	313-2300-017	2	2	2	2
Washer - 3/4" Flat	313-2300-023	8	8	8	8
Washer - #8 0.019" ID x 0.044" OD x 0.049" Thick	313-2300-123	3	3	3	3

MODEL YEARS 2010 - 2011

TABLE 2. AutoBoom UltraGlide and UltraGlide XT Installation Kits

Item Description	Part Number	117-0233-008 Qty.	117-0234-008 Qty.
Manual - AutoBoom Calibration and Operation	016-0130-062	1	1
Manual - RoGator UltraGlide XT Installation	016-0233-005	1	1
Valve - AutoBoom Add-On Hydraulic	063-0131-131	1	N/A
Valve - AutoBoom XT Hydraulic	063-0131-154	1	1
Node - UltraGlide XT	063-0130-023	1	1
Sensor - Left Ultrasonic	063-0130-014	1	1
Sensor - Ultrasonic Sensor	063-0130-026	4	N/A
Sensor - Rotary Non-Contact Con-X-All Connector	063-0181-018	1	1
Bracket - Rotary Sensor Mounting	107-0172-177	1	1

TABLE 2. AutoBoom UltraGlide and UltraGlide XT Installation Kits

Item Description	Part Number	117-0233-008 Qty.	117-0234-008 Qty.
Bracket - Rotary Sensor Bolt Mounting	107-0172-178	1	1
Bracket - UltraGlide XT Valve Mounting	107-0172-179	1	1
Bracket - UltraGlide XT Rotary Sensor Mounting	107-0172-268	1	1
Bracket - UltraGlide Node Mounting	107-0172-348	1	N/A
Bracket - UltraGlide XT Sensor Mounting	107-0172-349	1	1
Bracket - Ultrasonic Sensor Mounting	116-0159-684	1	1
Cable - 70' Sensor Extension	115-0171-527	2	2
Cable - 40' Sensor Extension	115-0171-602	2	2
Cable - RoGator 2010-2011 Node Harness	115-0230-104	1	1
Cable - RoGator 2010-2011 CAN/Power	115-0230-105	1	1

TABLE 2. AutoBoom UltraGlide and UltraGlide XT Installation Kits

Item Description	Part Number	117-0233-008 Qty.	117-0234-008 Qty.
Cable - RoGator 2010-2011 Aftermarket Valve and Sensor Harness	115-0230-106	1	1
Cable - UltraGlide XT Rotary Sensor	115-0230-110	1	1
Cylinder - 1.5" x 8" x 0.75" Hydraulic	334-0004-006	2	2
U-Bolt - 3-1/16" W x 4" L x 3/8" Thread	107-0171-608	2	2
U-Bolt - 1-9/16" W x 2-1/2" L x 3/8" Thread	107-0171-611	8	N/A
U-Bolt - 2-9/16" W x 3-1/2" L x 3/8" Thread	107-0171-616	2	2
U-Bolt - 3-1/16" W x 2-1/4" L x 3/8" - 16 Thread	107-0172-288	1	1
Bolt - 5/16"-18 x 1-3/4"	311-0052-108	1	N/A
Bolt - 5/16"-18 x 2-1/2" Hex	311-0052-111	3	N/A
Bolt - 5/16"-18 UNC x 3" Machine	311-0052-113	2	2

TABLE 2. AutoBoom UltraGlide and UltraGlide XT Installation Kits

Item Description	Part Number	117-0233-008 Qty.	117-0234-008 Qty.
Bolt - 5/16"-18 UNC X 3-1/2" Machine	311-0052-115	1	1
Bolt - 3/8"-16 UNC 1-1/4" Machine	311-0054-081	7	4
Bolt - 1/2"-13 UNC x 3-1/2" Machine	311-0058-105	1	1
Bolt - 3/4"-10 UNC x 4" Machine	311-0062-160	4	4
Screw - #8-32 UNC 2 x 1/2" Phillips Panhead Machine	311-0001-013	3	3
Screw - #8-32 UNC x 1-1/4" Phillips Panhead Machine	311-0001-023	3	3
Screw - 1/4"-20 X 3/4" Self-Tapping	311-0001-345	1	N/A
Nut - #8-32 UNC - 2B Hex	312-1001-020	6	6
Nut - 3/8"-16 Zinc Flanged Lock	312-1001-164	30	14
Nut - 5/16"-18 Nylon Insert Lock	312-4000-059	3	3

TABLE 2. AutoBoom UltraGlide and UltraGlide XT Installation Kits

Item Description	Part Number	117-0233-008 Qty.	117-0234-008 Qty.
Nut - 3/8"-16 Nylon Insert Lock	312-4000-061	3	N/A
Nut - 1/2"-13 Nylon Insert Lock	312-4000-065	1	1
Nut - 3/4"-10 Nylon Insert Lock	312-4000-071	4	4
O-Ring - 9/16" ID Buna-N	219-0001-015	4	N/A
Washer - 5/16" Split Lock	313-1000-019	4	N/A
Washer - 5/16" Flat	313-2300-011	8	8
Washer - 1/2" Flat	313-2300-017	2	2
Washer - 3/4" Flat	313-2300-023	8	8
Washer - 0.019" ID x 0.044" OD x 0.049" Thick	313-2300-123	3	3

MODEL YEAR 2012 - 2017

TABLE 3. AutoBoom UltraGlide and UltraGlide XT Installation Kits

Item Description	Part Number	117-0233-005 Qty.	117-0233-016 Qty.	117-0233-017 Qty.	117-0233-018 Qty.	117-0234-005 Qty.	117-0234-016 Qty.	117-0234-017 Qty.	117-0234-018 Qty.
Manual - AutoBoom Calibration and Operation	016-0130-062	1	1	1	1	1	1	1	1
Manual - RoGator UltraGlide XT Installation	016-0233-005	1	1	1	1	1	1	1	1
Valve - AutoBoom Hydraulic	063-0131-131	1	1	1	1	N/A	N/A	N/A	N/A
Valve - UltraGlide XT AutoBoom Hydraulic	063-0131-154	1	1	1	1	1	1	1	1
Node - UltraGlide XT AutoBoom	063-0130-023	1	N/A	1	N/A	1	N/A	1	N/A
Node - UltraGlide ISO AutoBoom	063-0130-024	N/A	1	N/A	1	N/A	1	N/A	1
Sensor - Center Ultrasonic	063-0130-014	1	1	1	1	1	1	1	1
Sensor - Ultrasonic	063-0130-026	4	4	4	4	N/A	N/A	N/A	N/A
Sensor Assembly - Con-X-All Non-Contact Rotary	063-0181-018	1	1	1	1	1	1	1	1

TABLE 3. AutoBoom UltraGlide and UltraGlide XT Installation Kits

Item Description	Part Number	117-0233-005 Qty.	117-0233-016 Qty.	117-0233-017 Qty.	117-0233-018 Qty.	117-0234-005 Qty.	117-0234-016 Qty.	117-0234-017 Qty.	117-0234-018 Qty.
Bracket - UltraGlide XT Sensor Bolt Mounting	107-0172-178	1	1	1	1	1	1	1	1
Bracket - UltraGlide XT Hydraulic Valve Mounting	107-0172-179	1	1	1	1	1	1	1	1
Bracket - Rotary Sensor Mounting	107-0172-268	1	1	1	1	1	1	1	1
Bracket - UltraGlide XT Sensor Mounting	107-0172-349	1	1	1	1	1	1	1	1
Bracket - Center Sensor	116-0159-684	1	1	1	1	1	1	1	1
Cable - 90'-100" Boom Sensor	115-0230-088	N/A	N/A	2	2	N/A	N/A	N/A	N/A
Cable - 120' Boom Sensor	115-0230-089	2	2	N/A	N/A	N/A	N/A	N/A	N/A
Cable - UltraGlide XT Node Harness	115-0230-109	1	1	1	1	1	1	1	1
Cable - UltraGlide XT Auxiliary Sensor	115-0230-110	1	1	1	1	1	1	1	1

TABLE 3. AutoBoom UltraGlide and UltraGlide XT Installation Kits

Item Description	Part Number	117-0233-005 Qty.	117-0233-016 Qty.	117-0233-017 Qty.	117-0233-018 Qty.	117-0234-005 Qty.	117-0234-016 Qty.	117-0234-017 Qty.	117-0234-018 Qty.
Cable - Valve Harness	115-0230-152	1	1	N/A	N/A	1	1	N/A	N/A
Cable - Valve Harness	115-0230-153	N/A	N/A	1	1	N/A	N/A	1	1
Cylinder - 1.5" x 8" x 0.75" Hydraulic	334-0004-006	2	2	2	2	2	2	2	2
U-Bolt - 3-1/16" W x 4" L x 3/8" Thread	107-0171-608	2	2	2	2	2	2	2	2
U-Bolt - 1-9/16" W x 2-1/2" L x 3/8" Thread	107-0171-611	8	8	8	8	N/A	N/A	N/A	N/A
U-Bolt - 2-9/16" W x 3-1/2" L x 3/8" Thread	107-0171-616	2	2	2	2	2	2	2	2
U-Bolt - 3-1/16" W x 2-1/4" L x 3/8" Thread	107-0172-288	1	1	1	1	1	1	1	1
Bolt - 5/16"-18 x 1-3/4" Hex	311-0052-108	1	1	1	1	N/A	N/A	N/A	N/A
Bolt - 5/16"-18 x 2-1/2" Hex	311-0052-111	3	3	3	3	N/A	N/A	N/A	N/A

TABLE 3. AutoBoom UltraGlide and UltraGlide XT Installation Kits

Item Description	Part Number	117-0233-005 Qty.	117-0233-016 Qty.	117-0233-017 Qty.	117-0233-018 Qty.	117-0234-005 Qty.	117-0234-016 Qty.	117-0234-017 Qty.	117-0234-018 Qty.
Bolt - 5/16"-18 UNC x 4" Machine	311-0052-092	2	2	2	2	2	2	2	2
Bolt - 3/8" - 16 UNC 1-1/4" Machine	311-0054-081	4	4	4	4	4	4	4	4
Bolt - 1/2"-13 UNC x 3-1/2" Machine	311-0058-105	1	1	1	1	1	1	1	1
Bolt - 3/4"-10 UNC x 4" Machine	311-0062-160	4	4	4	4	4	4	4	4
Screw - #8-32 UNC x 1/2" Phillips Panhead Machine	311-0001-013	3	3	3	3	3	3	3	3
Screw - #8-32 UNC x 1-1/4" Phillips Panhead Machine	311-0001-023	3	3	3	3	3	3	3	3
Nut - #8-32 UNC 2B Hex	312-1001-020	6	6	6	6	6	6	6	6
Nut - 3/8"-16 Zinc Flanged Lock	312-1001-164	30	30	30	30	14	14	14	14
Nut - 5/16"-18 Nylon Insert Lock	312-4000-059	2	2	2	2	2	2	2	2

TABLE 3. AutoBoom UltraGlide and UltraGlide XT Installation Kits

Item Description	Part Number	117-0233-005 Qty.	117-0233-016 Qty.	117-0233-017 Qty.	117-0233-018 Qty.	117-0234-005 Qty.	117-0234-016 Qty.	117-0234-017 Qty.	117-0234-018 Qty.
Nut - 1/2"-13 Nylon Insert Lock	312-4000-065	1	1	1	1	1	1	1	1
Nut - 3/4"-10 Nylon Insert Lock	312-4000-071	4	4	4	4	4	4	4	4
O-Ring - 9/16" ID Buna-N	219-0001-015	4	4	4	4	N/A	N/A	N/A	N/A
Washer - 5/16" Split Lock	313-1000-019	4	4	4	4	N/A	N/A	N/A	N/A
Washer - 1/2" Flat	313-2300-017	2	2	2	2	2	2	2	2
Washer - 3/4" Flat	313-2300-023	8	8	8	8	8	8	8	8
Washer - 0.19" ID x 0.44" OD x 0.049" Thick	313-2300-123	3	3	3	3	3	3	3	3

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TABLE 4. AutoBoom UltraGlide and UltraGlide XT Installation Kits

Item Description	Part Number	117-0233-020 Qty.	117-0233-021 Qty.	117-0233-022 Qty.	117-0233-023 Qty.	117-0234-020 Qty.	117-0234-021 Qty.	117-0234-022 Qty.	117-0234-023 Qty.
Manual - AutoBoom Calibration and Operation	016-0130-076	1	N/A	1	N/A	1	N/A	1	N/A
Manual - ISO AutoBoom Calibration and Operation	016-0130-078	N/A	1	N/A	1	N/A	1	N/A	1
Sheet - Warranty/Installation	016-0171-649	1	1	1	1	1	1	1	1
Valve - AutoBoom Hydraulic	063-0131-131	1	1	1	1	N/A	N/A	N/A	N/A
Valve - UltraGlide XT AutoBoom Hydraulic	063-0131-154	1	1	1	1	1	1	1	1
Node - UltraGlide XT AutoBoom	063-0130-023	1	N/A	1	N/A	1	N/A	1	N/A
Node - UltraGlide ISO AutoBoom	063-0130-024	N/A	1	N/A	1	N/A	1	N/A	1
Sensor - Ultrasonic	063-0130-018	1	1	1	1	N/A	N/A	N/A	N/A
Sensor - Ultrasonic	063-0130-026	4	4	4	4	N/A	N/A	N/A	N/A

TABLE 4. AutoBoom UltraGlide and UltraGlide XT Installation Kits

Item Description	Part Number	117-0233-020 Qty.	117-0233-021 Qty.	117-0233-022 Qty.	117-0233-023 Qty.	117-0234-020 Qty.	117-0234-021 Qty.	117-0234-022 Qty.	117-0234-023 Qty.
Sensor Assembly - Con-X-All Non-Contact Rotary	063-0181-018	1	1	1	1	1	1	1	1
Bracket - UltraGlide XT Sensor Bolt Mounting	107-0172-178	1	1	1	1	1	1	1	1
Bracket - UltraGlide XT Hydraulic Valve Mounting	107-0172-179	1	1	1	1	1	1	1	1
Bracket - Rotary Sensor Mounting	107-0172-268	1	1	1	1	1	1	1	1
Bracket - RoGator 2010-2011 AutoBoom Node Mounting	107-0172-348	N/A	1	N/A	N/A	N/A	N/A	N/A	N/A
Bracket - UltraGlide XT Sensor Mounting	107-0172-349	1	1	N/A	N/A	1	1	N/A	N/A
Bracket - Center Sensor	116-0159-684	N/A	N/A	1	1	N/A	N/A	1	1
Cable - 90'-100" Boom Sensor	115-0230-088	2	2	N/A	N/A	N/A	N/A	N/A	N/A
Cable - 120' Boom Sensor	115-0230-089	N/A	N/A	2	2	N/A	N/A	N/A	N/A

TABLE 4. AutoBoom UltraGlide and UltraGlide XT Installation Kits

Item Description	Part Number	117-0233-020 Qty.	117-0233-021 Qty.	117-0233-022 Qty.	117-0233-023 Qty.	117-0234-020 Qty.	117-0234-021 Qty.	117-0234-022 Qty.	117-0234-023 Qty.
Cable - UltraGlide XT Auxiliary Sensor	115-0230-110	1	1	1	1	1	1	1	1
Cable - RoGator Model Year 2012+ AutoBoom Valve	115-0230-138	1	1	1	1	N/A	N/A	N/A	N/A
Cable - RoGator Model Year 2012+ Center Sensor	115-0230-139	1	1	1	1	N/A	N/A	N/A	N/A
Cylinder - 1.5" x 8" x 0.75" Hydraulic	334-0004-006	2	2	2	2	2	2	2	2
U-Bolt - 3-1/16" W x 4" L x 3/8" Thread	107-0171-608	1	1	2	2	1	1	2	2
U-Bolt - 1-9/16" W x 2-1/2" L x 3/8" Thread	107-0171-611	8	8	8	8	N/A	N/A	N/A	N/A
U-Bolt - 2-9/16" W x 3-1/2" L x 3/8" Thread	107-0171-616	2	2	2	2	2	2	2	2
U-Bolt - 3-1/16" W x 2-1/4" L x 3/8" Thread	107-0172-288	1	1	1	1	1	1	1	1
Bolt - 5/16"-18 x 1-3/4" Hex	311-0052-108	1	1	1	1	N/A	N/A	N/A	N/A

TABLE 4. AutoBoom UltraGlide and UltraGlide XT Installation Kits

Item Description	Part Number	117-0233-020 Qty.	117-0233-021 Qty.	117-0233-022 Qty.	117-0233-023 Qty.	117-0234-020 Qty.	117-0234-021 Qty.	117-0234-022 Qty.	117-0234-023 Qty.
Bolt - 5/16"-18 x 2-1/2" Hex	311-0052-111	3	3	3	3	N/A	N/A	N/A	N/A
Bolt - 5/16"-18 UNC x 4" Machine	311-0052-092	2	2	2	2	2	2	2	2
Bolt - 3/8"-16 UNC x 1-1/4" Machine	311-0054-081	4	7	4	7	4	4	4	4
Bolt - 1/2"-13 UNC x 3-1/2" Machine	311-0058-105	1	1	1	1	1	1	1	1
Bolt - 3/4"-10 UNC x 4" Machine	311-0062-160	4	4	4	4	4	4	4	4
Screw - #8-32 UNC x 1/2" Phillips Panhead Machine	311-0001-013	3	3	3	3	3	3	3	3
Screw - #8-32 UNC x 1-1/4" Phillips Panhead Machine	311-0001-023	3	3	3	3	3	3	3	3
Screw - 1/4"-20 x 3/4" Self- Tapping Hex Head	311-0001-345	N/A	2	N/A	2	N/A	N/A	N/A	N/A
Nut - #8-32 UNC 2B Hex	312-1001-020	6	6	6	6	6	6	6	6

TABLE 4. AutoBoom UltraGlide and UltraGlide XT Installation Kits

Item Description	Part Number	117-0233-020 Qty.	117-0233-021 Qty.	117-0233-022 Qty.	117-0233-023 Qty.	117-0234-020 Qty.	117-0234-021 Qty.	117-0234-022 Qty.	117-0234-023 Qty.
Nut - 3/8"-16 Zinc Flanged Lock	312-1001-164	30	31	30	33	12	12	14	14
Nut - 5/16"-18 Nylon Insert Lock	312-4000-059	2	2	2	2	2	2	2	2
Nut - 1/2"-13 Nylon Insert Lock	312-4000-065	1	1	1	1	1	1	1	1
Nut - 3/4"-10 Nylon Insert Lock	312-4000-071	4	4	4	4	4	4	4	4
O-Ring - 9/16" ID Buna-N	219-0001-015	4	4	4	4	N/A	N/A	N/A	N/A
Washer - 5/16" Split Lock	313-1000-019	4	4	4	4	N/A	N/A	N/A	N/A
Washer - 1/2" Flat	313-2300-017	2	2	2	2	2	2	2	2
Washer - 3/4" Flat	313-2300-023	8	8	8	8	8	8	8	8
Washer - 0.19" ID x 0.44" OD x 0.049" Thick	313-2300-123	3	3	3	3	3	3	3	3

HYDRAULIC INSTALLATION KIT

TABLE 5. UltraGlide XT Hydraulic Installation Kit (P/N 117-0134-094)

Item Description	Part Number	Qty.
Fitting - -8 ORFS M/M/F Swivel Run Tee Adapter	333-0012-028	1
Fitting - -6 JIC M/M/F Swivel Run Tee Adapter	333-0012-043	2
Fitting - -6 JIC (M) to -6 SAE O-Ring (M) Straight Adapter	333-0012-045	2
Fitting - -4 SAE O-Ring Plug	333-0012-051	8
Fitting - -6 ORFS M/M/F Swivel Run Tee Adapter	333-0012-069	1
Fitting - -6 ORFS (M) to -6 SAE O-Ring (M) Straight Adapter	333-0012-084	2
Fitting - -6 SAE O-Ring Plug	333-0012-104	2
Hydraulic Hose - -6 JIC (F) to -6 JIC (F) - 200"	214-1001-034	2
Hydraulic Hose - -6 JIC (F) 90° to -6 JIC (F) - 120"	214-1001-035	2

TABLE 5. UltraGlide XT Hydraulic Installation Kit (P/N 117-0134-094)

Item Description	Part Number	Qty.
Hydraulic Hose - -6 ORFS (F) to -6 ORFS (F) 90° - 24"	214-1001-055	1
Hydraulic Hose - -8 ORFS (F) TO -6 ORFS (F) 90° - 24"	214-1000-092	1

ULTRASONIC SENSOR BRACKET KIT

TABLE 6. Ultrasonic Sensor Bracket Installation Kit - Qty. 2 (P/N 117-0131-082)

Item Description	Part Number	Qty.
Sheet - AutoBoom Sensor Extension	016-0130-070	1
Nut - 1/4"-20 Nylon Insert Lock	312-4000-057	4
Washer - 1/4" Zinc Flat	313-2300-010	4
Extension Mount - 12" S-Type, Sensor	063-0131-592	2



⚠ WARNING

The machine must remain stationary and switched off, with the booms folded and in the transport position, during installation or maintenance.

Bleed pressure from the hydraulic system by operating the boom tilt functions while the key is on, but the machine's engine is off.



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

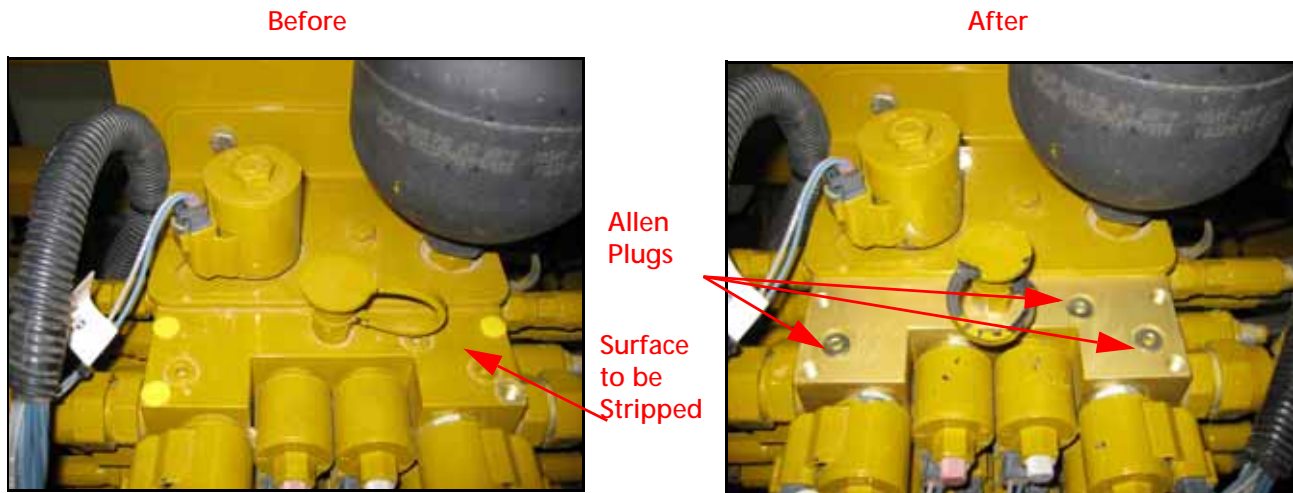


NOTICE

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.

MOUNT THE AUTOBOOM VALVE (IF APPLICABLE)

FIGURE 1. Machine's Hydraulic Valve Before AutoBoom Installation



1. Strip the factory paint from the top of the machine's hydraulic valve using a chemical approved for paint removal.

IMPORTANT: Do not scrape the paint from the machine's hydraulic valve. Scraping the paint may cause damage to the valve.

2. Remove the hydraulic test port fitting and Allen plugs from the machine's hydraulic valve.

NOTE: The test port fitting will be installed on the AutoBoom hydraulic valve later in the procedure. Protect the test port fitting from dust and debris to avoid contamination of the hydraulic system.

3. Clean the remaining paint from the machine's hydraulic valve, taking care to prevent paint chips from entering the open hydraulic ports.
4. Install 9/16" ID Buna-N O-rings (P/N 219-0001-015) in the open ports of the machine's hydraulic valve.

NOTE: Use grease or petroleum jelly to hold the O-rings in place during the AutoBoom valve installation, taking care to avoid contamination of the inside of the open ports.

FIGURE 2. O-Rings Installed on the Machine's Hydraulic Valve



5. Blow any excess oil out of the hydraulic port threads.
6. Clean excess oil, grease, and debris from the top of the machine's hydraulic valve.
7. Clean excess hydraulic fluid from the AutoBoom valve (P/N 063-0131-113).
8. Install the supplied 5/16"-18 x 1-3/4" hex bolts (P/N 311-0052-108) and 5/16"-18 x 2-1/2" hex bolts (P/N 311-0052-111) in the AutoBoom valve, placing the shorter bolt in the cut-out section of the valve.
9. Carefully place the AutoBoom valve on the machine's hydraulic valve, positioning it so that the cut-out section faces the accumulator.

FIGURE 3. AutoBoom Valve Mounted to the Machine's Hydraulic Valve



10. Alternately tighten each bolt a small amount to a maximum of 15 - 20 ft. lbs. per bolt.
11. Install the hydraulic test fitting in Port GP of the AutoBoom valve.

INSTALL FITTINGS IN THE ULTRAGLIDE XT VALVE

Before mounting the UltraGlide XT valve (P/N 063-0131-154) on the machine, install the proper fittings in the valve. This prepares the valve for installation and simplifies the hose connection process later in the procedure. Refer to the figure and table below to install the fittings in the appropriate ports of the UltraGlide XT valve.

FIGURE 4. Fittings Installed in UltraGlide XT Valve



Fitting	Part Number	Port
Fitting - -4 SAE O-Ring Plug	333-0012-051	GT, GP, G1, G2, LS, LS1, GLT, GRT
Fitting - -6 SAE O-Ring Plug	333-0012-104	P1, T2
Fitting - -6 ORFS (M) to -6 SAE O-Ring (M) Straight Adapter	333-0012-084	P2, T1
Fitting - -6 JIC (M) to -6 SAE O-Ring (M) Straight Adapter	333-0012-045	1, 2

MOUNT THE ULTRAGLIDE XT VALVE ASSEMBLY

FIGURE 5. Valve Mounting Location



1. Locate the UltraGlide XT valve mounting location on the boom tree assembly, to the right of the machine's hydraulic valve.
2. Secure the UltraGlide XT valve (P/N 063-0131-154) to the mounting bracket (P/N 107-0172-179) using two 5/16"-18 UNC x 4" bolts (P/N 311-0052-092) and two 5/16"-18 nylon-insert lock nuts (P/N 312-4000-059).
3. Mount the UltraGlide XT valve mounting bracket on the boom tree assembly using two 2-9/16" W x 3-1/2" L x 3/8" thread U-bolts (P/N 107-0171-616) and four 3/8"-16 flanged lock nuts (P/N 312-1001-164).

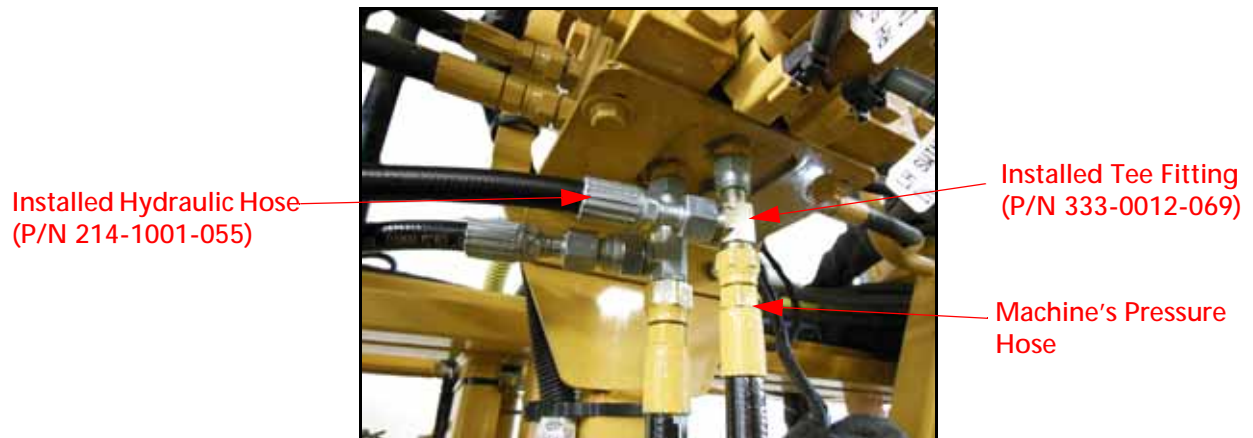
INSTALL THE PRESSURE AND TANK HOSES

FIGURE 6. Machine's Pressure Hose



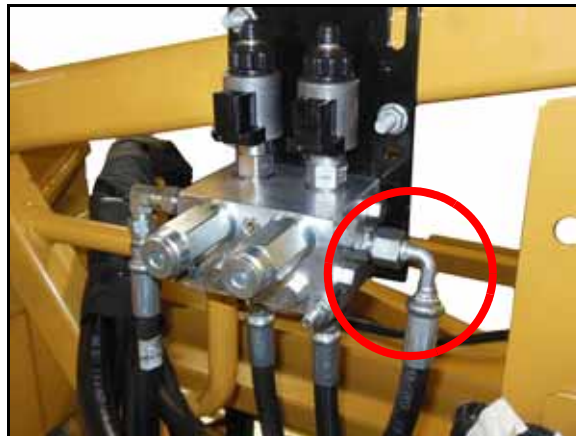
1. Locate and disconnect the existing pressure hose from the machine's hydraulic valve.

FIGURE 7. Pressure Hose Installed



2. Install a -6 ORFS M/M/F swivel run tee adapter fitting (P/N 333-0012-069) on the fitting 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 straight end of the supplied hydraulic hose (P/N 214-1001-055) on the 90° end of the installed tee fitting.

FIGURE 8. Pressure Hose Installed on UltraGlide XT Valve



5. Connect the 90° end of the installed hydraulic hose to the fitting installed in Port P2 of the UltraGlide XT valve (P/N 063-0131-154).

FIGURE 9. Machine's Tank Hose



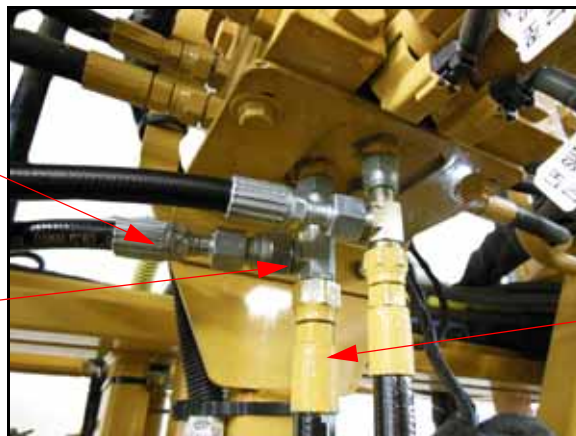
1. Locate and disconnect the existing tank hose from the machine's hydraulic valve.

FIGURE 10. Tank Hose Installed

Installed Hydraulic Hose
(P/N 214-1001-092)

Installed Tee Fitting
(P/N 333-0012-069)

Machine's Tank Hose



2. Install a -8 ORFS M/M/F swivel run tee fitting (P/N 333-0012-028) on the fitting in the machine's tank port.

3. Connect the machine's tank hose to the opposite end of the installed tee fitting.
4. Install the -8 ORFS end of the supplied hydraulic hose (P/N 214-1001-092) on the 90° end of the installed tee fitting.

FIGURE 11. Tank Hose Installed on UltraGlide XT Valve



5. Connect the -6 FF end of the installed hydraulic hose to port T1 of the UltraGlide XT valve.

INSTALL THE ULTRAGLIDE XT CYLINDERS

1. Unfold the booms and lower the center rack to its lowest position.
2. Machines With 120' Booms or Heavy Duty Center Rack Only - Locate and remove the rubber bumpers on the bottom front of the machine's center rack.

FIGURE 12. Rubber Bumpers



3. Remove the left factory-installed shock absorber.

FIGURE 13. Shock Absorber Bolts to be Removed - 90'-100' Booms



FIGURE 14. Shock Absorber Bolt to be Removed - 120' Booms



NOTE: On machines with 120' booms or heavy duty center racks, the lower shock absorber bolts are accessible only when the center rack is rotated to its extremes. To rotate the center rack, unfold the outer tip of the right boom while leaving the outer tip of the left boom folded in.

IMPORTANT: To prevent injury, use extreme caution when removing lower shock absorber bolts as shown in the figure below. The location of these bolts can create pinch points!

4. Position the rod-end of the supplied hydraulic cylinder (P/N 334-0004-006) in the machine's top mounting clevis.
5. Insert a 3/4" flat washer (P/N 313-2300-023) between the cylinder and the mounting clevis.

FIGURE 15. Cylinder Installed - 90'-100' Booms



FIGURE 16. Cylinder Installed - 120' Booms



6. Insert a 3/4"-10 UNC x 4" bolt (P/N 331-0062-160) through the clevis and the cylinder end.
7. Install a 3/4" flat washer (P/N 313-2300-023) on the end of the installed bolt.
8. Secure the cylinder in place using a 3/4"-10 nylon insert lock nut (P/N 312-4000-071).
9. Position the base-end of the hydraulic cylinder in the machine's bottom mounting clevis.
10. Repeat steps 5-8 above to secure the base of the hydraulic cylinder.
11. Unfold the left boom tip and fold in the right boom tip to access the shock absorber bolts on the right side.
12. Repeat steps 4-10 above to install the right hydraulic cylinder.
13. Machines with 120' Booms or Heavy Duty Center Rack Only - Reinstall the rubber bumpers.

INSTALL THE CYLINDER HOSES

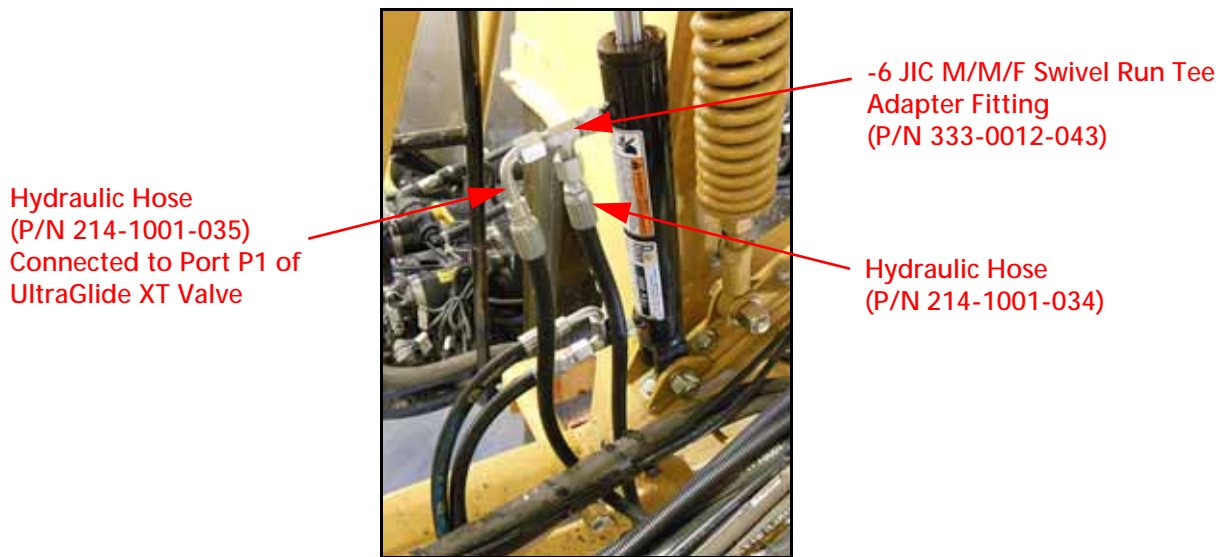
1. Install -6 JIC M/M/F swivel run tee adapter fittings (P/N 333-0012-043) in the open ports on the left hydraulic cylinder (P/N 334-0004-006).

FIGURE 17. Hose Installed on UltraGlide XT Valve



2. Install one end of the supplied hydraulic (P/N 214-1001-034) hose on the fitting installed in Port 1 of the UltraGlide XT valve (P/N 063-0131-154).

FIGURE 18. Hydraulic Hoses Installed on Left Cylinder



3. Install the other end of the installed hydraulic hose on the 90° end of the tee fitting installed in the rod-end of the hydraulic cylinder.
4. Install the 90° end of the supplied hydraulic hose (P/N 214-1001-035) on the remaining end of the rod-end tee fitting.

FIGURE 19. Hydraulic Hose Installed



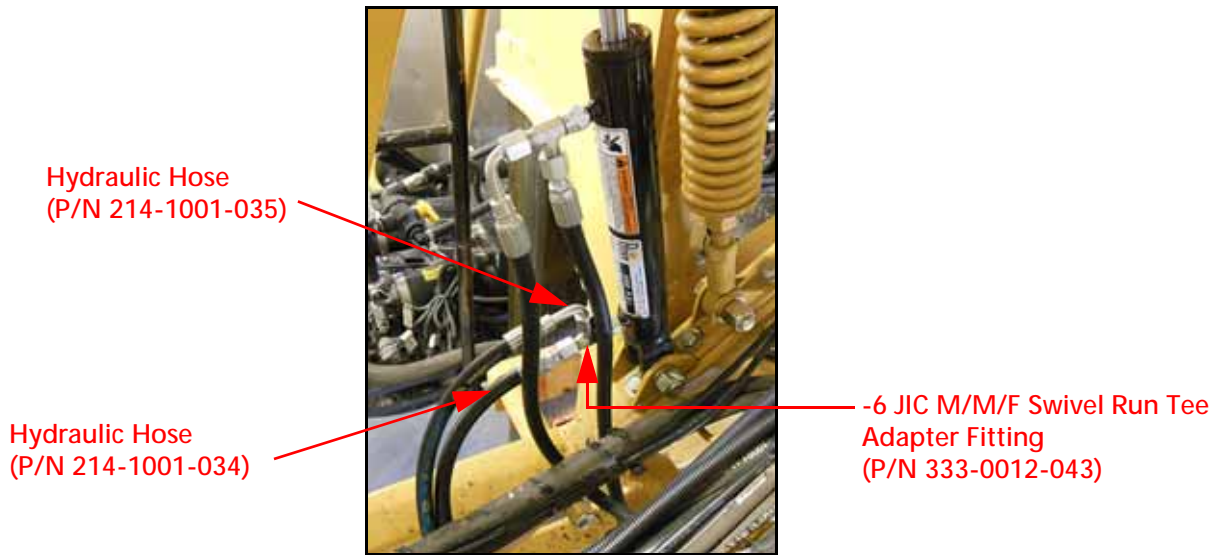
5. Connect the straight end of the installed hydraulic hose to the base-end of the installed right hydraulic cylinder.

FIGURE 20. Hose Installed on UltraGlide XT Valve



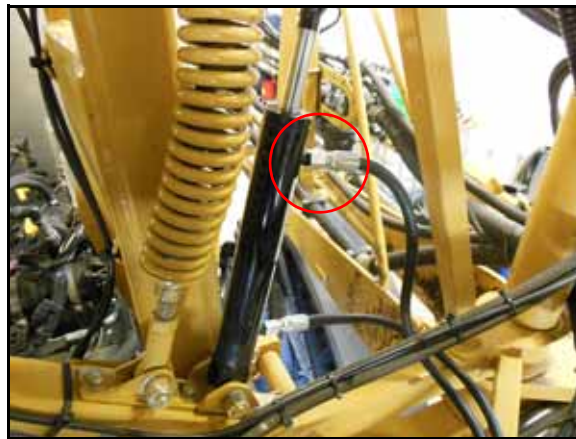
6. Install one end of the supplied hydraulic hose (P/N 214-1001-034) to the fitting installed in Port 2 of the UltraGlide XT valve.

FIGURE 21. Hydraulic Hoses Installed on Left Cylinder



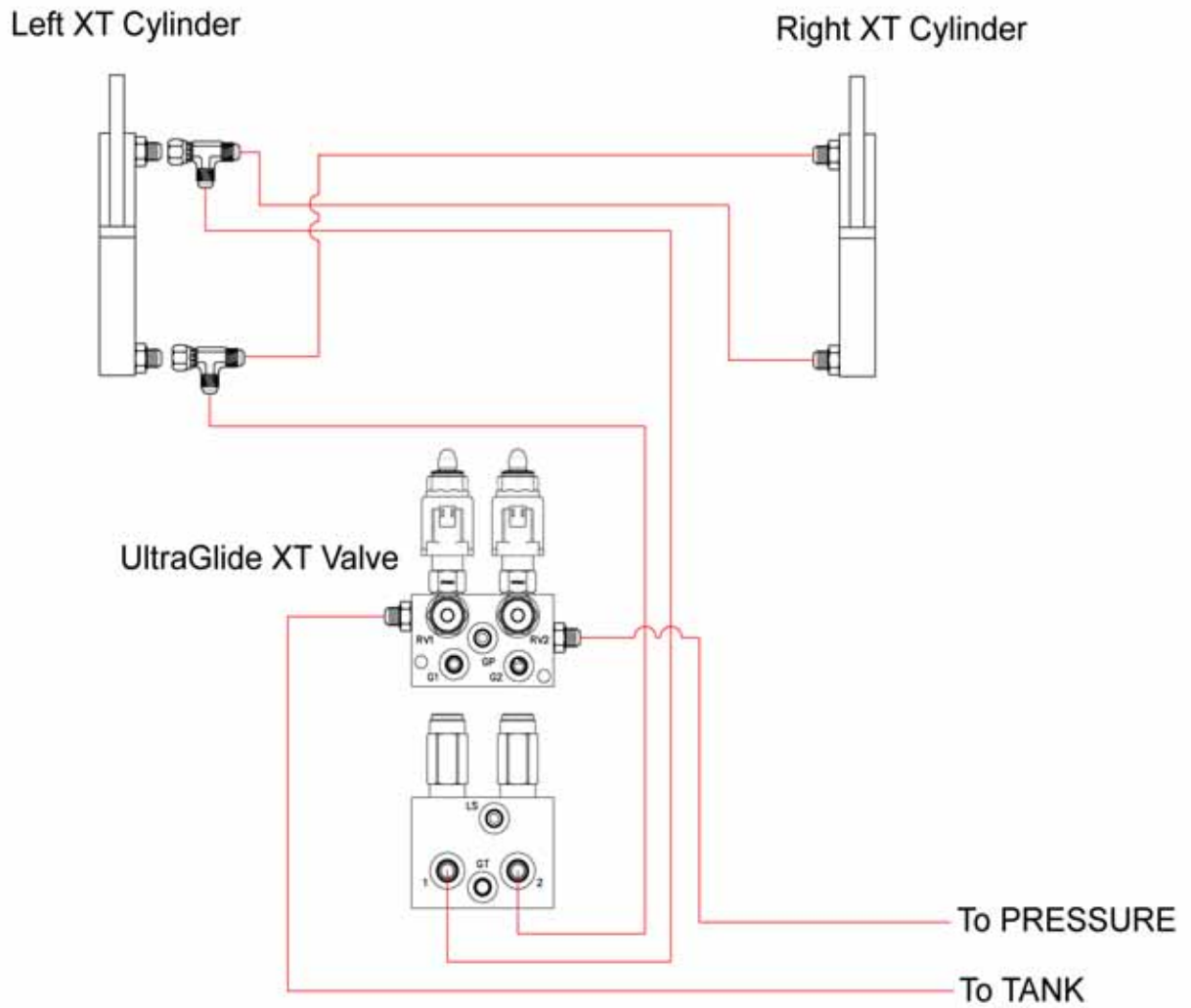
7. Connect the other end of the installed hydraulic hose to the straight end of the installed tee fitting installed in the base-end of the hydraulic cylinder.
8. Install the 90° end of the supplied hydraulic hose (P/N 214-1001-035) on the 90° end of the tee fitting.

FIGURE 22. Hydraulic Hose Installed

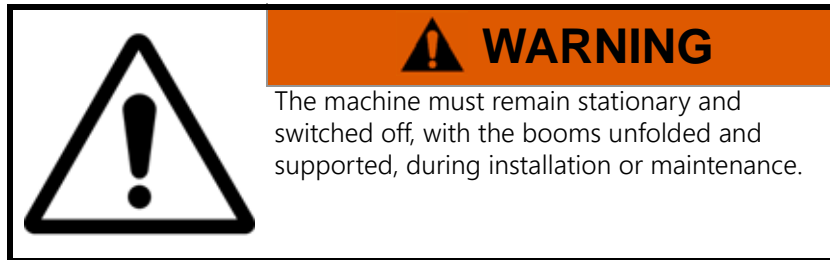


9. Connect the straight end of the installed hydraulic hose to the rod-end of the installed right hydraulic cylinder.
10. Ensure all hoses are secured away from moving parts and heat sources and do not interfere with boom function.

HYDRAULIC SCHEMATIC



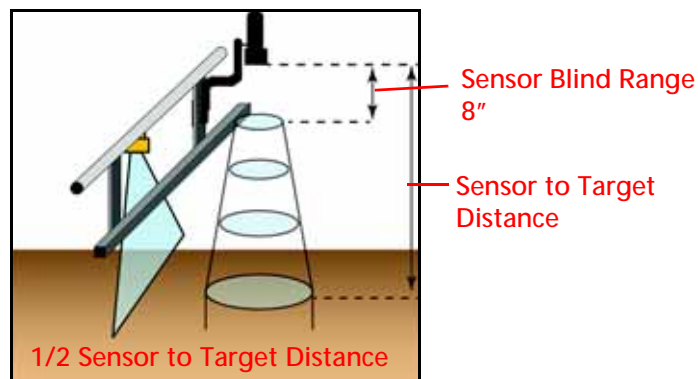
NOTE: If the AutoBoom UltraGlide kit is already installed on the machine, it may or may not be necessary to install additional boom sensors. If boom sensors are being installed on the machine, complete all sections in this chapter. If no boom sensors are being installed, proceed to the Install the Rotary Sensor section on page 52.



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 XT system and to protect the sprayer boom, the sensor should be mounted on the front side of the boom, 8 - 10" above the lowest hanging part of the boom.

FIGURE 1. Illustration of Sensor's Blind Range



INSTALL THE SENSORS - ULTRAGLIDE NOT INSTALLED ON THE MACHINE

MOUNT THE BOOM SENSORS

FIGURE 2. Mounted Boom Sensor

Inner Sensor



Outer Sensor



1. Locate the ultrasonic sensors (P/N 063-0130-026) in the UltraGlide XT installation kit.
2. Install the sensors on the 12" S-type sensor arms (P/N 063-0131-592) using two 1/4"-20 nylon insert lock nuts (P/N 312-4000-057) and two 1/4" flat washers (P/N 313-2300-010) per sensor.
3. Mount the sensors to the front of the booms using two 1-9/16" W x 2-1/2" L x 3/8" thread U-bolts (P/N 107-0171-611) and four 3/8"-16 zinc flanged lock nuts (P/N 312-1001-164).

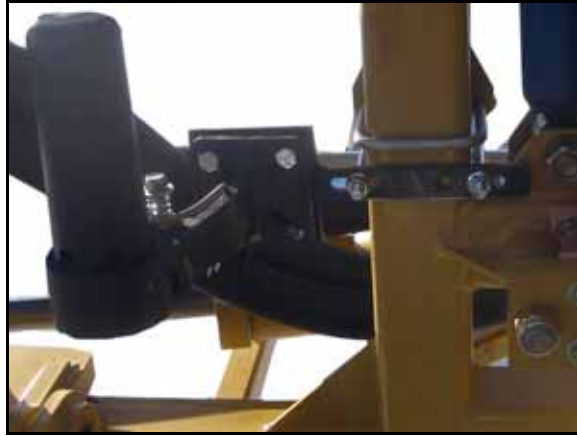
NOTE: The outer sensors should be mounted on the boom breakaway. The inner sensors should be mounted just inside the inner fold joint.

4. Tighten the nuts to ensure the sensors are mounted securely.

INSTALL THE CENTER RACK SENSOR

90' - 100' BOOMS

FIGURE 3. Center Rack Sensor Installed



1. Mount the center sensor mounting bracket (P/N 107-0171-349) to the machine's center rack using a 3-1/16" x 4" x 3/8" thread U-bolt (P/N 107-0171-608) and two 3/8" - 16" zinc flanged lock nuts (P/N 312-1001-164).
2. Secure the center sensor (P/N 063-0130-014) to the sensor mounting bracket using four 3/8" - 16 UNC x 1-1/4" machine bolts (P/N 311-0054-106) and four 3/8" - 16 zinc flanged lock nuts (P/N 312-1001-164).
3. Tighten the nuts to ensure the sensor is mounted securely.

120' BOOMS

FIGURE 4. Center Sensor Installed



1. Secure the center sensor (P/N 063-0130-014) to the ultrasonic sensor boom mount weldment bracket (P/N 116-0159-684) using four 3/8"-16 UNC x 1-1/4" hex bolts (P/N 311-0054-106) and four 3/8"-16 zinc flanged lock nuts (P/N 312-1001-164).
2. Mount the center sensor to the machine's center rack using two 3-1/16" W x 4" L x 3/8" thread U-bolts (P/N 107-0171-608) and four 3/8" zinc flanged lock nuts (P/N 312-1001-164).

INSTALL THE SENSORS - ULTRAGLIDE INSTALLED ON THE MACHINE (IF APPLICABLE)

MOUNT THE BOOM SENSORS

NOTE: For optimal system performance, Raven Industries recommends a five sensor system configuration including 12" S-type bracket assemblies. One dual sensor upgrade kit (P/N 117-0137-031) and one ultrasonic sensor bracket extension kit (P/N 117-0131-082) are required to complete the five sensor configuration. These UltraGlide XT sensor upgrade kits are sold separately. Contact your Raven dealer for ordering information.

NOTE: If 12" S-type brackets are not being installed on the machine, skip this section and proceed to Install the Center Rack Sensor (Model Year 2017 & Older) section on page 50.

1. Remove the existing UltraGlide boom sensors from the machine.

FIGURE 5. Mounted Boom Sensor



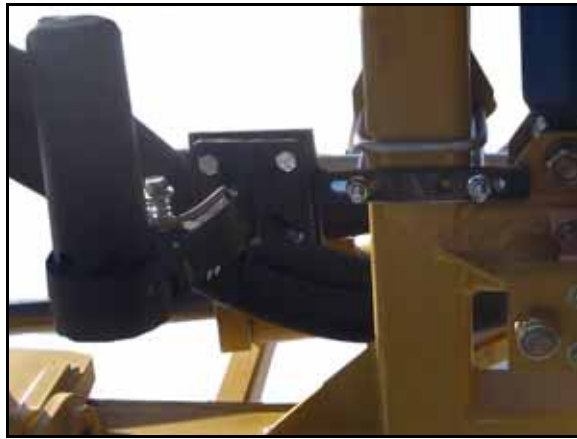
2. Install the 12" S-type brackets (P/N 063-0131-592) from the UltraGlide XT sensor upgrade kit (P/N 117-0131-082) on the existing boom sensors using the bracket's bolts, two 1/4"-20 nylon insert lock nuts (P/N 312-4000-057), and two 1/4" flat washers (P/N 313-2300-010) per sensor.
3. Mount the boom sensors on the breakaway boom, outside the breakaway joint using two 1-9/16" W x 2-1/2" L x 3/8" thread U-bolts (P/N 107-0171-611) and four 3/8"-16 zinc flanged lock nuts (P/N 312-1001-164) per sensor.
4. Install the two sensors (P/N 063-0130-026) from the dual sensor upgrade kit (P/N 117-0137-031) on the 12" S-type sensor arms using two 1/4"-20 nylon insert lock nuts (P/N 312-4000-057) and two 1/4" flat washers (P/N 313-2300-010) per sensor.
5. Mount the inner sensors on the front of the booms, just inside the fold joint using two 1-9/16" W x 2-1/2" L x 3/8" thread U-bolts (P/N 107-0171-611) and four 3/8"-16 zinc flanged lock nuts (P/N 312-1001-164) per sensor.
6. Tighten all nuts to ensure the sensors are mounted securely.

INSTALL THE CENTER RACK SENSOR (MODEL YEAR 2017 & OLDER)

NOTE: Optimal system performance is achieved by installing the center sensor as outlined in the steps below. The center rack sensor (if equipped) from the existing AutoBoom system will not be used.

90' - 100' BOOMS

FIGURE 6. Center Rack Sensor Installed



1. Mount the center sensor mounting bracket (P/N 107-0171-349) to the machine's center rack using a 3-1/16" x 4" x 3/8" thread U-bolt (P/N 107-0171-608) and two 3/8"-16" zinc flanged lock nuts (P/N 312-1001-164).
2. Secure the center sensor (P/N 063-0130-014) to the sensor mounting bracket using four 3/8"-16 UNC x 1-1/4" machine bolts (P/N 311-0054-081) and four 3/8"-16 zinc flanged lock nuts (P/N 312-1001-164).
3. Tighten the nuts to ensure the sensor is mounted securely.

120' BOOMS

FIGURE 7. Center Sensor Installed



1. Secure the center sensor (P/N 063-0130-014) to the ultrasonic sensor boom mount weldment bracket (P/N 116-0159-684) using four 3/8"-16 UNC x 1-1/4" hex bolts (P/N 311-0054-081) and four 3/8"-16 zinc flanged lock nuts (P/N 312-1001-164).
2. Mount the center sensor to the machine's center rack using two 3-1/16" W x 4" L x 3/8" thread U-bolts (P/N 107-0171-608) and four 3/8" zinc flanged lock nuts (P/N 312-1001-164).

INSTALL THE ROTARY SENSOR

FIGURE 8. Rotary Sensor Installed on Mounting Bracket

Sensor Installed on Bracket P/N 107-0172-177



Sensor Installed on Bracket P/N 107-0172-268



- Determine the correct rotary sensor bracket for your machine.
 - 2009 RoGator - P/N 107-0172-177
 - 2010-2011 RoGator - P/N 107-0172-177 or P/N 107-0172-268
 - 2012 and Newer RoGator - P/N 107-0172-268
- Install the non-contact rotary sensor (P/N 063-0181-018) on the rotary sensor bracket using two #8-32 x 1/2" screws (P/N 311-0001-013) and two #8-32 hex nuts (P/N 312-1001-020).

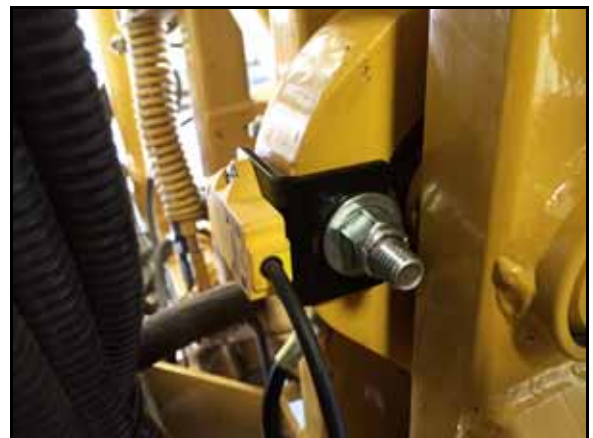
FIGURE 9. Pivot Bearing Bolt to be Removed



- Remove the horizontal bolt at the rear of the pivot bearing.

NOTE: The existing washers will be used later in the installation procedure. The original bolt and hex nut will not be reused in the UltraGlide XT installation.

FIGURE 10. Rotary Sensor Installed



4. Install the rotary sensor mounting bracket.

- If sensor bracket P/N 107-0172-268 is being installed, secure the rotary sensor mounting bracket on the pivot bearing's open hole using the machine's existing heavy duty washers, one 1/2"-13 x 3-1/2" bolt (P/N 311-0058-105), two 1/2" flat washers (P/N 313-2300-017), and one 1/2"-13 nylon insert lock nut (P/N 312-4000-065) as shown below.

NOTE: Reinstall the machine's heavy duty washers in their original location. When fully assembled, one of the washers will be under the head of the bolt and the other will be positioned under the rotary sensor mounting bracket.

- If sensor bracket P/N 107-0172-177 is being installed, secure the rotary sensor mounting bracket on the pivot bearing's open hole using the machine's heavy duty washers, one 5/16"-18 x 3-1/2" bolt (P/N 311-0052-115), 5/16" flat washers (P/N 313-2300-011), and one 5/16"-18 nylon insert lock nut (P/N 312-4000-059) as shown below.

NOTE: Reinstall the machine's heavy duty washers in their original location. Use as many 5/16" washers as necessary to fill the gap between the mounting bracket and the heavy duty washers. Use an equal amount of washers on each side to center the sensor above the bearing.

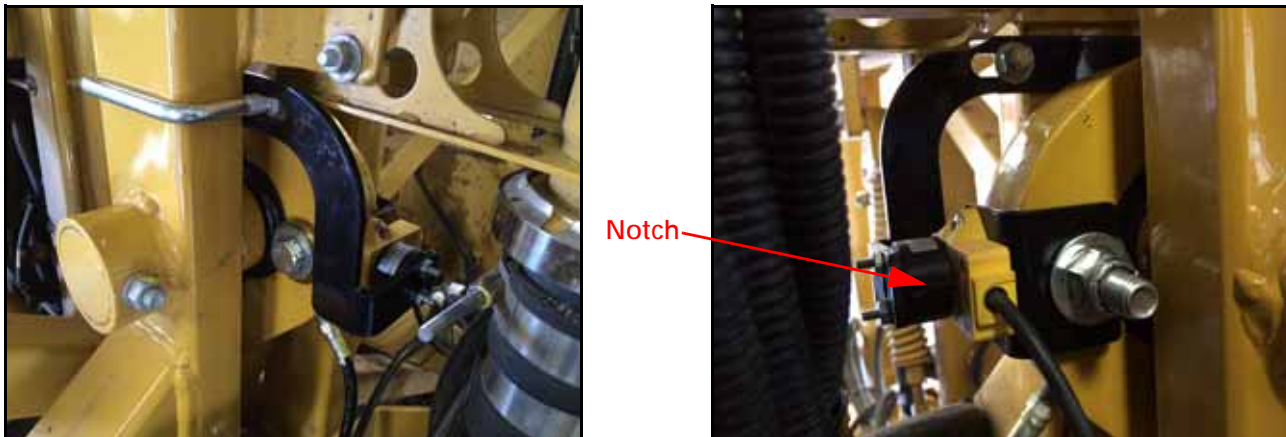
NOTE: Use masking tape to hold the washer pack together during assembly.

FIGURE 11. Puck Installed on Mounting Bracket



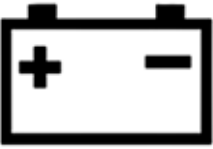
5. Install the black puck from the rotary sensor installation kit on the short leg of the UltraGlide XT bolt mounting bracket (P/N 107-0172-178) using two #8-32 x 1-1/4" screws (P/N 311-0001-023) and two #8-32 hex nuts (P/N 312-1001-020).

FIGURE 12. UltraGlide XT Sensor Bolt Mounting Bracket Installed



6. Align the black puck with the rotary sensor, positioning the bracket as shown above.
7. Secure the bolt mounting bracket to the vertical support beam next to the pivot bearing using a 3-1/16" W x 2-1/4" L x 3/8" thread U-bolt (P/N 107-0172-288) and two 3/8" flanged lock nuts (P/N 312-1001-164).
8. Adjust the mounting bracket so that the center of the puck aligns with the center of the rotary sensor and that a clearance of less than 3 mm is maintained between the puck and the rotary sensor.
9. Tighten the mounting hardware to ensure the sensor is mounted securely.

WIRING CONNECTIONS

	⚠ CAUTION
Always connect the power cable as the last step in the wiring process and verify that the power leads are connected with the correct polarity. Reversing power leads can cause severe damage to the equipment.	

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.

MODEL YEAR 2018 & NEWER RG C-SERIES NODE AND HARNESS INSTALLATION

INSTALL THE NODE HARNESS

FIGURE 1. Node Mounting Location



1. Locate the node box on the right side of the machine and remove the cover.

FIGURE 2. AUTOBOOM TIP CONTROL Connectors

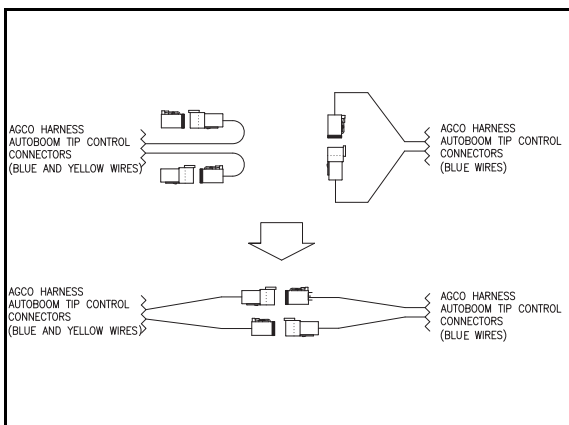


2. Locate and disconnect the machine's AUTOBOOM TIP CONTROL connectors with the blue wires.

NOTE: The machine's AUTOBOOM TIP CONTROL connectors are located in the node box.

3. Locate and disconnect the machine's unused AUTOBOOM TIP CONTROL connectors with the blue and yellow wires.

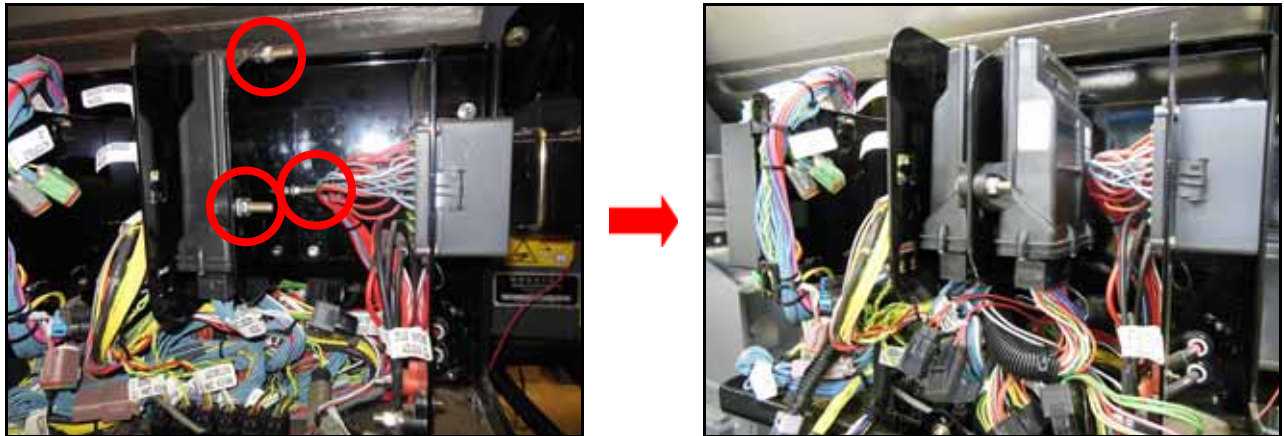
FIGURE 3. AUTOBOOM TIP CONTROL Harness Connectors



4. Plug the machine's AUTOBOOM TIP CONTROL connectors with the blue wires into the machine's mating AUTOBOOM TIP CONTROL connectors with the yellow and blue wires.
5. Connect the large rectangular connectors on the machine's node harness into the correct ports of the AutoBoom node (P/N 063-0130-023 or 063-0130-024).
6. Tighten the bolts on the node connectors to secure the connections.

INSTALL THE ULTRAGLIDE XT NODE

FIGURE 4. UltraGlide XT Node Installed



1. If applicable, install the node mounting bracket (P/N 107-0172-348) in the node box using one 1/4"-2 x 3/4" hex head self-tapping screw.

NOTE: If the machine has AccuBoom installed, the AccuBoom node mounting bracket should be used to mount the UltraGlide XT node.

2. Mount the UltraGlide XT node (P/N 063-0130-023 or 016-0130-024) on the node mounting bracket using three 3/8"-16 UNC x 1-1/4" machine bolts (P/N 311-0054-081) and 3/8"-16 zinc flanged lock nuts (P/N 312-1001-164).

INSTALL THE VALVE HARNESS

FIGURE 5. Valve Harness Installed on the AutoBoom Valve



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

1. Locate the LEFT PRESS and RIGHT PRESS connectors on the valve harness (P/N 115-0230-138).
2. Route the connectors to the AutoBoom valve (P/N 063-0131-131).
3. Connect the LEFT PRESS connector to Port GL of the AutoBoom valve.
4. Connect the RIGHT PRESS connector to Port GR of the AutoBoom valve.
5. Locate the LEFT SOLENOID and RIGHT SOLENOID connectors on the valve harness.

6. Connect the LEFT SOLENOID connector to Port 8 on the left side of the AutoBoom valve.
7. Connect the RIGHT SOLENOID connector to Port 8 on the right side of the AutoBoom valve.
8. Locate the LEFT PROP and RIGHT PROP connectors on the valve harness.
9. Connect the LEFT PROP connector to Port 6 on the left side of the AutoBoom valve.
10. Connect the RIGHT PROP connector to Port 6 on the right side of the AutoBoom valve.

FIGURE 6. Machine's 12-Pin Harness Connection



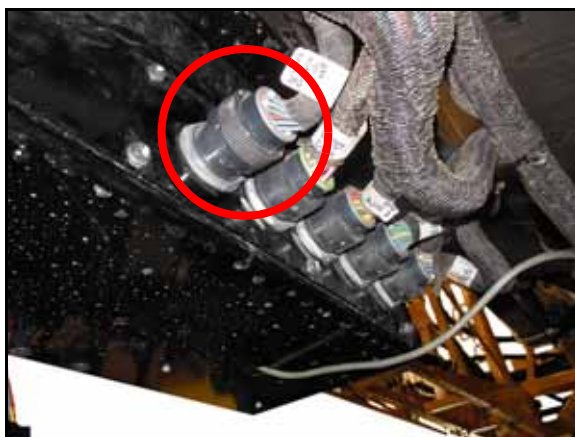
11. Connect the 12-pin Deutsch connector to the mating connector on the machine's harness.

MODEL YEAR 2012-2017 RG SERIES NODE AND HARNESS INSTALLATION

INSTALL THE NODE HARNESS

1. Locate the node mounting box at the front-right corner of the liquid tank and remove the cover.
2. Remove the existing AutoBoom node and disconnect the cable connectors from it, if applicable.

FIGURE 7. Bulkhead Connector to be Removed



3. Disconnect the SYS BLKHD 5 connector from the back of the node box.

- Remove the bulkhead locking nut from the connector and place the connector back into the node mounting box.

FIGURE 8. Node Harness Installed on Bulkhead (View from Inside Box)



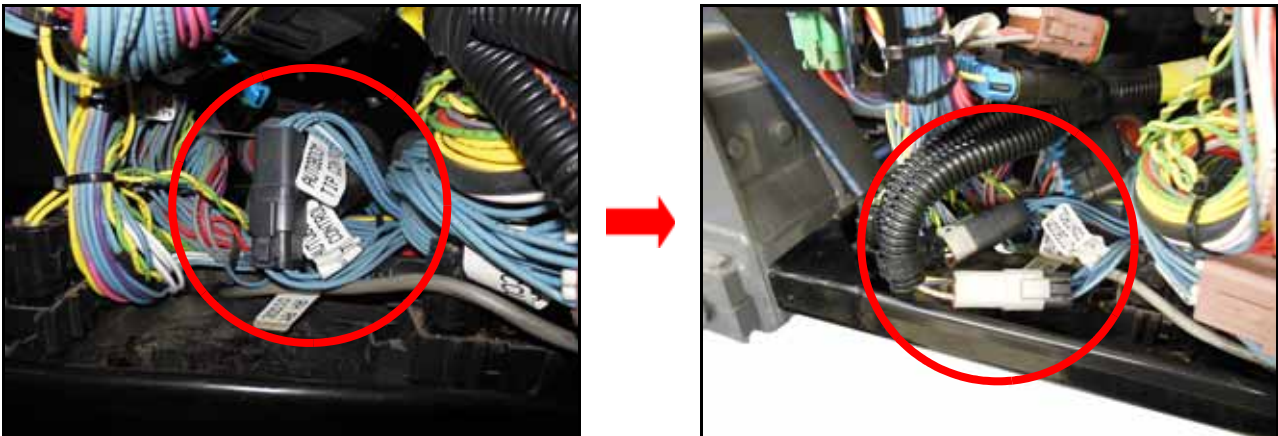
- Install the large 31-pin connector from the UltraGlide XT node harness (P/N 115-0230-109) through the open hole in the bulkhead from which the SYS BLKHD 5 connector was removed.
- Thread the bulkhead locking nut that was removed from the SYS BLKHD 5 connector onto the 31-pin connector to secure it.

FIGURE 9. Connector to be Removed



- Disconnect the RAVEN CAN TO AUTOBOOM connector from the front-center of the node box, near the latch pin.
- Locate the CAN connector on the node harness and connect it to the open connection.

FIGURE 10. Existing AutoBoom Tip Control Connection



9. Locate and disconnect the existing AUTOBOOM TIP CONTROL connections.

IMPORTANT: There are two sets of AUTOBOOM TIP CONTROL connections. Use the connectors that are connected together, not the connectors that are capped off.

10. Connect the AUTOBOOM TIP CONTROL connectors to the mating BOOM SENSE 1 and BOOM SENSE 2 connectors of the node harness.

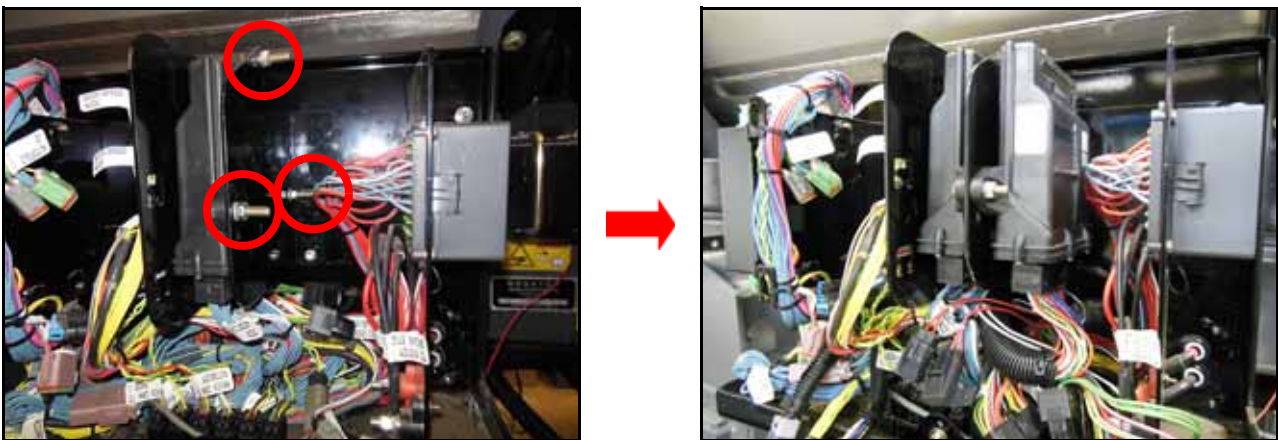
11. Insert the large, rectangular node connectors from the node harness into the correct ports of the UltraGlide XT node (P/N 063-0130-023 or 063-0130-024).

12. Connect the ground leads to the negative battery terminal located near the front of the node mounting box.

13. Connect the power leads to the positive battery terminal.

INSTALL THE ULTRAGLIDE XT NODE

FIGURE 11. UltraGlide XT Node Installed



1. Mount the UltraGlide XT node (P/N 063-0130-023 or 063-0130-024) on the existing node mounting bracket (mounting hardware not provided).

NOTE: If a node mounting bracket is not present, contact your AGCO dealer for ordering information.

2. Tighten the nuts to ensure the node is mounted securely.

INSTALL THE VALVE HARNESS

FIGURE 12. Valve Harness Installed on AutoBoom Valve



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

1. Locate the LEFT PRESS and RIGHT PRESS connectors on the valve harness cable (P/N 115-0230-152 or 115-0230-153).
2. Connect the LEFT PRESS connector to Port GL of the AutoBoom valve (P/N 063-0131-131).
3. Connect the RIGHT PRESS connector to Port GR of the AutoBoom valve.
4. Locate the LEFT SOLENOID and RIGHT SOLENOID connectors on the valve harness cable.
5. Connect the LEFT SOLENOID connector to Port 8 on the left side of the AutoBoom valve.
6. Connect the RIGHT SOLENOID connector to Port 8 on the right side of the AutoBoom valve.
7. Locate the LEFT PROP and RIGHT PROP connectors on the valve harness.
8. Connect the LEFT PROP connector to Port 6 on the left side of the AutoBoom valve.
9. Connect the RIGHT PROP connector to Port 6 on the right side of the AutoBoom valve.

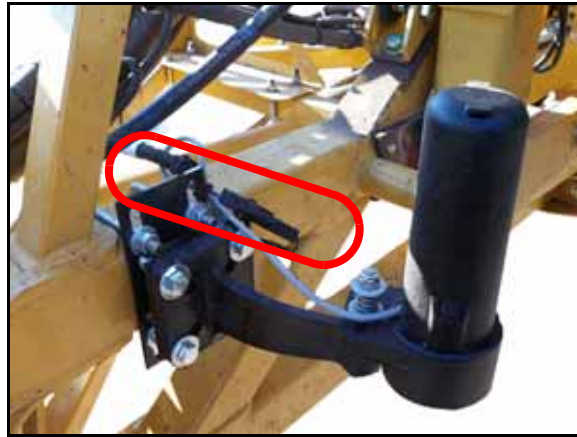
FIGURE 13. Valve Harness Installed on Bulkhead



10. Route the 31-pin connector toward the node mounting box.
11. Connect the 31-pin connector to the open bulkhead connection in the node mounting box.
12. Secure the cable properly to allow for the machine's suspension movement.

CONNECT THE VALVE HARNESS TO THE SENSORS - ULTRAGLIDE NOT INSTALLED ON THE MACHINE

FIGURE 14. CENTER BOOM SENSOR Harness Connection



13. Connect the CENTER BOOM SENSOR connector to the center rack sensor.
14. Route the LEFT BOOM SENSORS connector along the product hose and down the left boom.
15. Connect the 6-pin Deutsch connector of the sensor extension cable (P/N 115-0230-088 or 115-0230-089) to the LEFT BOOM SENSORS connector.
16. Connect the INNER SENSOR connector to the cable connector of the installed left inner sensor.
17. Connect the OUTER SENSOR connector to the cable connector of the installed left outer sensor.
18. Route the RIGHT BOOM SENSORS connector along the product hose and down the right boom.
19. Connect the 6-pin Deutsch connector of the sensor extension cable (P/N 115-0230-088 or 115-0230-089) to the RIGHT BOOM SENSORS connector.
20. Connect the INNER SENSOR connector to the cable connector of the installed right inner sensor.
21. Connect the OUTER SENSOR connector to the cable connector of the installed right outer sensor.

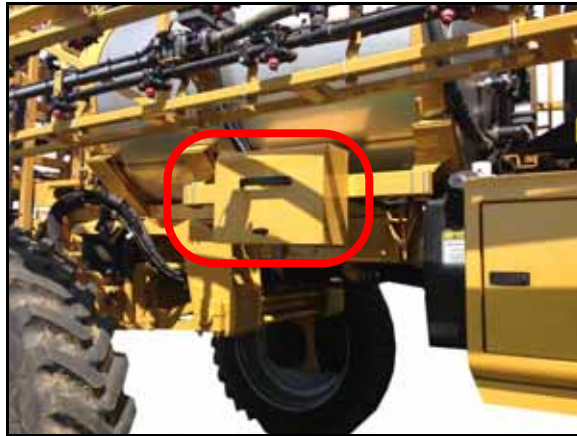
CONNECT THE VALVE HARNESS TO THE SENSORS - ULTRAGLIDE INSTALLED ON THE MACHINE (IF APPLICABLE)

1. Connect the CENTER BOOM SENSOR connector to the center rack sensor.
2. Route the LEFT BOOM SENSORS connector along the product hose and down the left boom.
3. Connect the LEFT BOOM SENSORS connector to the existing sensor cable.
4. Route the RIGHT BOOM SENSORS connector along the product hose and down the right boom.
5. Connect the RIGHT BOOM SENSORS connector to the existing sensor cable.

MODEL YEAR 2010-2011 - 9X4(H), 11X4(H), 13X6 SERIES NODE AND HARNESS INSTALLATION

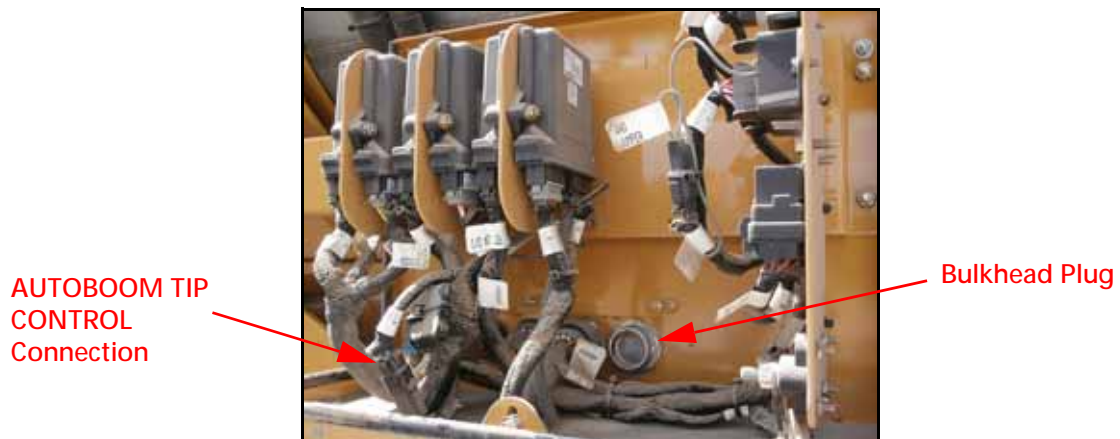
INSTALL THE NODE HARNESS

FIGURE 15. Node Mounting Location



1. Locate the node box on the right side of the machine and remove the cover.

FIGURE 16. Bulkhead Plug Location



2. Remove the bulkhead plug.

NOTE: Keep the bulkhead washer and lock nut for use later in this procedure.

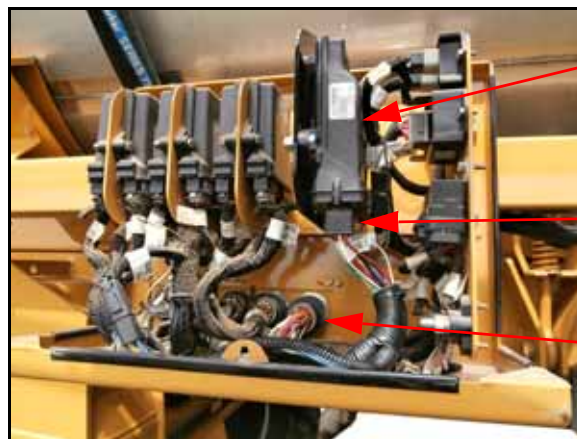
FIGURE 17. AUTOBOOM TIP CONTROL Connectors



3. Locate and disconnect the machine's AUTOBOOM TIP CONTROL connectors.
4. Plug the AUTOBOOM TIP CONTROL connectors into the mating BOOM SENSE 1 and BOOM SENSE 2 connectors on the node harness cable (P/N 115-0230-104).

INSTALL THE ULTRAGLIDE XT NODE

FIGURE 18. AutoBoom Node Installed



AutoBoom Node (P/N 063-0130-023)

Node Connectors on AutoBoom Harness

31-Pin Bulkhead Connector on AutoBoom Harness

5. Connect the large, rectangular connectors on the node harness into the correct ports of the AutoBoom node (P/N 063-0130-023).
6. Tighten the bolts on the node connectors to secure the connections.
7. Secure the AutoBoom node to the node mounting bracket (P/N 107-0171-348) using three 3/8"-16 x 1-1/4" hex bolts (P/N 311-0054-081) and three 3/8"-16 nylon insert lock nuts (P/N 312-4000-061).
8. Mount the node mounting plate to the node mounting box using the supplied 1/4"-20 x 3/4" self-tapping screw (P/N 311-0001-345).
9. Install the 31-pin connector on the node harness through the inboard side of the node box, securing it using the bulkhead washer and lock nut that were removed from the bulkhead plug.

INSTALL THE VALVE HARNESS

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

FIGURE 19. Valve Harness Installed on the AutoBoom Valve



1. Locate the LEFT PRESS and RIGHT PRESS connectors on the Valve harness cable (P/N 115-1203-106).
2. Route the connectors to the AutoBoom valve (P/N 063-0131-131).
3. Connect the LEFT PRESS connector to Port GL of the AutoBoom valve.
4. Connect the RIGHT PRESS connector to Port GR of The AutoBoom Valve.
5. Locate the LEFT SOLENOID and RIGHT SOLENOID connectors on the calve harness.
6. Connect the LEFT SOLENOID connector to Port 8 on the right side of the AutoBoom valve.
7. Connect the RIGHT SOLENOID connector to Port 8 on the right side of the AutoBoom valve.
8. Locate the LEFT PROP and RIGHT PROP connectors on the valve harness.
9. Connect the LEFT PROP connector to Port 6 on the left side of the AutoBoom valve.
10. Connect the RIGHT PROP connector to Port 6 on the right side of the AutoBoom valve.

CONNECT THE SENSOR CABLES

1. Install the LEFT OUTER SENSOR connector on the 70' sensor cable (P/N 115-0171-527).
2. Connect the other end of the 70' sensor cable to the left outer sensor (P/N 063-0173-026).
3. Install the LEFT INNER SENSOR connector on the 40' sensor cable (P/N 115-0171-602).
4. Connect the other end of the 40' sensor cable to the left inner sensor.
5. Install the RIGHT OUTER SENSOR connector on the 70' sensor cable.
6. Connect the other end of the 70' sensor cable to the right outer sensor.
7. Install the RIGHT INNER SENSOR connector on the 40' sensor cable.
8. Connect the other end of the 40' installed sensor cable to the right inner sensor.
9. Connect the CENTER US SENSOR connector to the center sensor (P/N 063-0130-014) cable connection.

INSTALL THE POWER/CAN CABLE

1. Connect the SYS HARNESS connector of the power/CAN cable (P/N 115-0230-105) to the mating 31-pin connector on the valve and sensor harness (P/n 115-0230-106).
2. Connect the 31-pin AB BULKHEAD connector to the mating 31-pin connector of the node harness (P/N 115-0230-104) installed on the machine's bulkhead.

3. Remove the CAN terminator from the machines harness located outside the node box.

FIGURE 20. Existing CAN Terminator



4. Connect the CAN BUS connector on the AutoBoom power/CAN cable to the open connector on the machine's harness.
5. Install the terminator on the TERMINATOR connection of the AutoBoom power/CAN cable.

FIGURE 21. CAN PWR Connector



6. Locate the machine's CAN PWR connection outside of the node box.
7. Remove the cap from the CAN PWR connection.
8. Connect the SW PWR connector of the AutoBoom power/CAN cable to the machine's CAN PWR connector.
9. Route the remaining AutoBoom power/CAN cable along the machine's existing cabling and toward the battery box at the front of the machine.
10. Install the high current power and ground wires on the power cable to the power and ground studs located in the machine's battery box.

MODEL YEAR 2009 NODE AND HARNESS INSTALLATION

INSTALL THE ULTRAGLIDE XT NODE

FIGURE 22. Installed AutoBoom Node



1. Mount the AutoBoom node (P/N 063-0130-023) on the mounting bracket (P/N 107-0171-619) using three 3/8"-16 UNC 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).
2. Secure the mounting bracket to the machine's center rack using two 2-9/16" W x 3-1/2" L x 3/8" thread U-bolts (P/N 107-0171-616) and four 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. One of the six numbered direction arrows on the node must be oriented in the direction of vehicle travel, one arrow pointing straight up, and two arrows parallel to the ground.

3. Insert the large, rectangular node connectors on the harness cable (P/N 115-0230-095 or 115-0230-116) into the correct ports of the AutoBoom node.
4. Tighten the bolt on the node connectors to secure the connections.

CONNECT THE HARNESS TO THE BOOM FUNCTION CONTROLS

FIGURE 23. Harness Cabling Connections

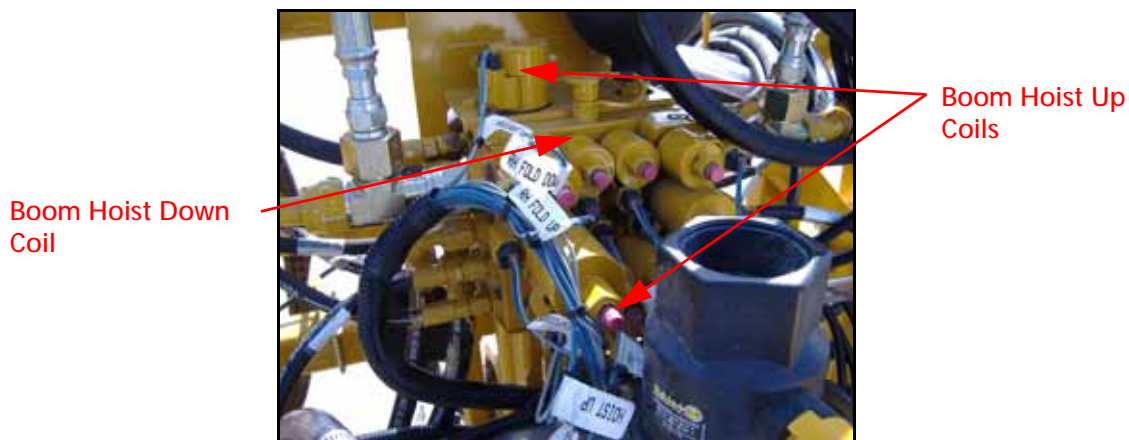


1. Locate the LEFT PRESS and RIGHT PRESS connectors on the valve harness (P/N 115-0230-095 or 115-0230-116).

2. Route the connectors to the AutoBoom Valve (P/N 063-0131-131).
3. Connect the LEFT PRESS connector to Port GL of the AutoBoom valve.
4. Connect the RIGHT PRESS connector to Port GR of the AutoBoom valve.
5. Locate the LEFT SOLENOID and RIGHT SOLENOID connectors on the valve harness.
6. Connect the LEFT SOLENOID connector to Port 8 on the left side of the AutoBoom valve.
7. Connect the RIGHT SOLENOID connector to Port 8 on the right side of the AutoBoom valve.
8. Locate the LEFT PROP and RIGHT PROP connectors on the valve harness.
9. Connect the LEFT PROP connector to Port 6 on the left side of the AutoBoom valve.
10. Connect the RIGHT PROP connector to Port 6 on the right side of the AutoBoom valve.
11. Disconnect the connector from the machine's left tilt up coil.
12. Install a boom sense adapter cable (P/N 115-0171-546) between the coil and the machine's connector.
13. Connect boom sense adapter cables between the left tilt down, right tilt up, and right tilt down coils and their connectors.
14. On the harness cable, locate the LEFT SOLENOID sense connectors.
15. Isolate the connector labeled UP and connect it to the left tilt up coil via the installed boom sense adapter cable.
16. Connect the unlabeled LEFT SOLENOID connector to the left tilt down coil via the installed boom sense adapter cable.
17. Connect the RIGHT SOLENOID sense connectors to the machine's right tilt up and right tilt down coils via the installed boom sense adapter cables.

INSTALL THE CENTER RACK CONTROL

FIGURE 24. Center Rack Control



1. Locate the upper and lower boom hoist up coils in the machine's hydraulic valve.
2. Disconnect the cable connector from the lower boom hoist up coil.

NOTE: The lower boom hoist up coil points toward the machine's cab.

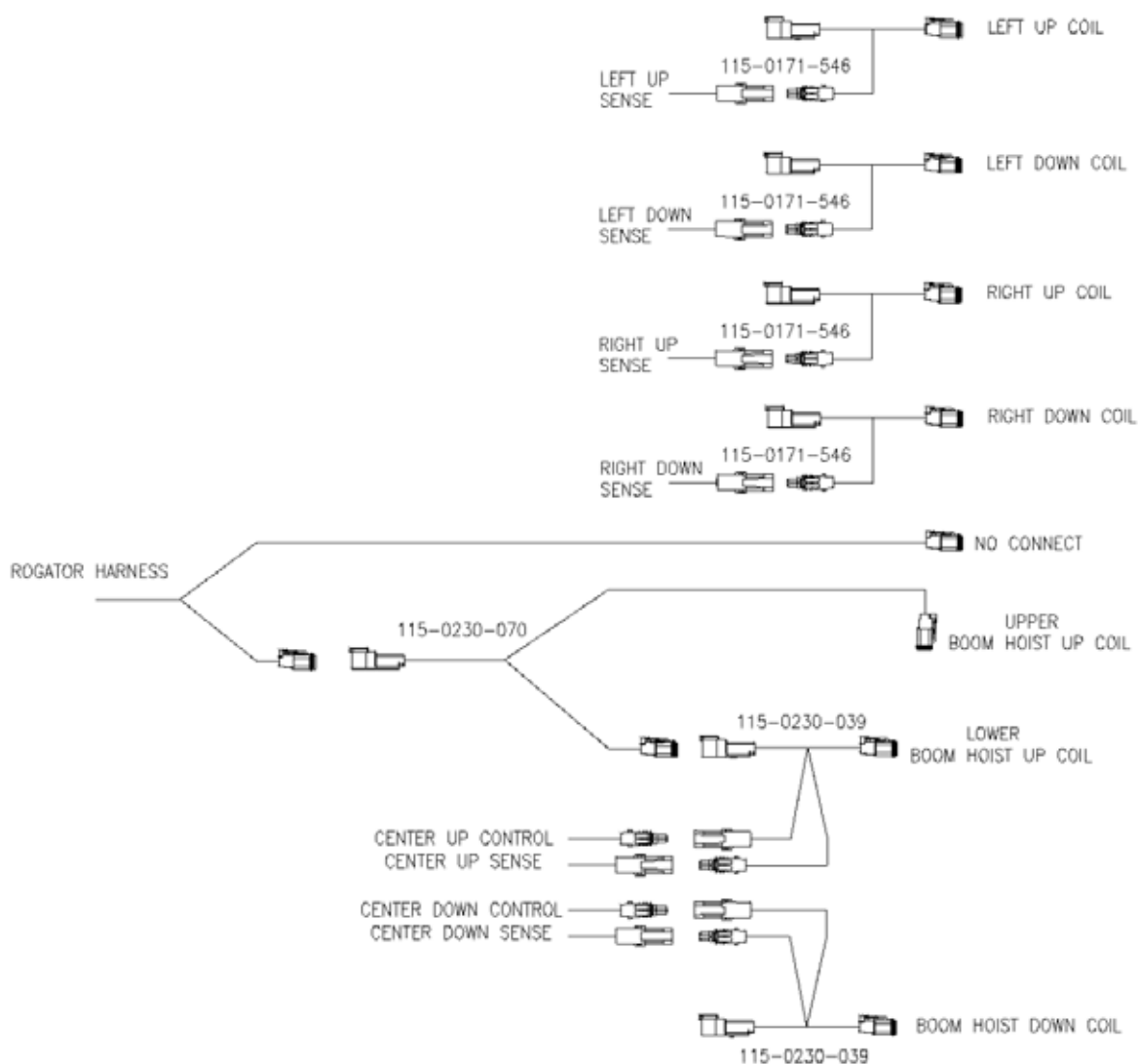
3. Install a center rack control boom sense adapter cable (P/N 115-0230-039) on the lower boom hoist up coil.
4. Connect one of the male ends of the power splitter cable (P/N 115-0230-070) to the installed boom sense adapter cable.
5. Connect the female end of the power splitter cable to the cable removed from the lower boom hoist up coil.

- Disconnect the cable connector from the upper boom hoist up coil.

NOTE: Use cable ties to tie-off this connector. It is not used in the AutoBoom UltraGlide XT system.

- Connect the remaining male end of the power splitter cable to the upper boom hoist up coil.
- Disconnect the connector from the boom hoist down coil.
- Install a center rack control boom sense adapter cable (P/N 115-0230-039) between the coil and the cable connector.
- Connect the ends of the installed boom sense adapter cable (P/N 115-0230-039) on the lower boom hoist up coil to the CENTER SOL UP SENSE and CONTROL connectors on the AutoBoom harness cable (P/N 115-0230-095 or 115-0230-116).
- Connect the ends of the installed boom sense adapter cable on the boom hoist down coil to the CENTER SOL DOWN SENSE and CONTROL connectors on the AutoBoom harness cable.

FIGURE 25. Boom Sense Schematic



CONNECT THE HARNESS CABLE TO THE SENSORS

- Install the LEFT OUTER SENSOR connector on the 70' sensor cable (P/N 115-0171-527).
- Connect the other end of the 70' sensor cable to the left outer sensor (P/N 063-0130-026).

3. Install the LEFT INNER SENSOR connector on the 40' sensor cable (P/N 115-0171-602).
4. Connect the other end of the 40' sensor cable to the left inner sensor.
5. Install the RIGHT OUTER SENSOR connector on the 70' sensor cable.
6. Connect the other end of the 70' installed sensor cable to the right outer sensor.
7. Install the RIGHT INNER SENSOR connector on the 40' sensor cable.
8. Connect the other end of the installed 40' sensor cable to the right inner sensor.
9. Connect the CENTER US SENSOR connector to the center sensor (P/N 063-0130-014) cable connection.

CONNECT THE HARNESS CABLE TO THE POWER CABLE - GEN I CABLE ONLY

1. Route the harness cable (P/N 115-0230-116) toward the machine's cab.
2. Connect the harness cable to the power cable (P/N 115-0230-007).
3. Tighten the connector screw cap to secure the connection.

CONNECT THE CAN/POWER CABLES - GEN I CABLE ONLY

FIGURE 26. Existing CAN Terminator



1. Locate the CAN cable under the cat-walk on the right side of the machine.
 - If a CAN passive terminator is on the CAN connector as shown in Figure 26 on page 70:
 - a. Remove the CAN terminator.
 - b. Connect the male CAN connection on the power cable (P/N 115-0230-007) to the connector from which the terminator was removed.
 - c. Install the terminator on the CAN connection of the harness cable (P/N 115-0230-116) coming from the AutoBoom node.
 - If the CAN connector does not have a CAN passive terminator and another CAN cable is already connected:
 - a. Disconnect the existing CAN termination.
 - b. Connect the CAN connection from the power cable (P/N 115-0230-007) into the connector from which the other CAN cable was unplugged.
 - c. Reroute the disconnected CAN cable to the CAN connection near the AutoBoom node on the harness cable (P/N 115-0230-116).
 - d. Loop and tie-off any excess cable.
2. Locate the CAN power connector as shown in Figure 26 on page 70.
 - If the CAN power connector is not is use:

- a. Remove the dust cap from the power connection.
- b. Insert the power connection into the power cable (P/N 115-0230-007).
- If the CAN power connector is in use:
 - a. Locate the switched power wire on the power cable (P/N 115-0230-007).
 - b. Route and connect the switched power wire to a source switched power.

NOTE: Recommended locations are on the Raven controller or in the machine's cab. Several Raven consoles offer a +12V switched power connector on the console cable, which may be used to switch the circuit.

CONNECT THE POWER LEADS - GEN I CABLE ONLY

1. Locate the power cable that has the power and ground leads at one end.
2. Disconnect the machine's connectors from the battery terminals.
3. Install the power lead on the positive battery terminal and reinstall the machine's battery connector.
4. Install the ground lead on the negative battery terminal and reinstall the machine's battery connector.

CONNECT THE HARNESS CABLE TO THE IMPLEMENT EXTENSION TEE - GEN II CABLE ONLY

1. Route the harness cable (P/N 115-0230-095) towards the implement extension tee cable.
2. Connect the harness cable to the node connector.
3. Remove the terminator from the machine's chassis harness or the standalone console harness.
4. Install the terminator on the remaining open end of the implement extension tee cable.
5. Refer to the wiring schematics (starting on page 74) appropriate for the machine's configuration to route the implement extension tee cable.
6. Connect the implement extension tee cable to the location determined in step 5.

INSTALL THE ULTRAGLIDE XT AUXILIARY SENSOR CABLE

MODEL YEAR 2017 & OLDER

FIGURE 27. Valve Harness Connected to Auxiliary Sensor Cable



1. Connect the ULTRAGLIDE XT connector of the valve harness (P/N 115-0230-106, 115-0230-095, or 115-0230-116) to the mating 12-pin connector of the auxiliary sensor cable (P/N 115-0230-110).

2. Install the SLANT CW connector to the coil connector in Port PRV1 of the UltraGlide XT valve (P/N 063-0131-154).
3. Install the SLANT CCW connector to the coil connector in Port PRV2 of the UltraGlide XT valve.

FIGURE 28. Slant Connectors Installed



4. Connect the ROTARY SENSOR connector to the rotary sensor cable connector.

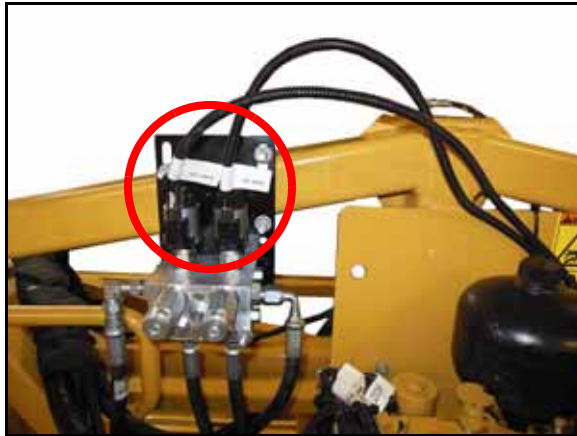
MODEL YEAR 2018 & NEWER

FIGURE 29. 12-Pin Connector Connected to AGCO Harness



1. Connect the 12-pin connector of the XT auxiliary sensor cable (P/N 115-0230-110) to the mating connector of the AGCO harness.
2. Install the SLANT CW connector to the coil connector in Port PRV1 of the UltraGlide XT valve (P/N 063-0131-154).
3. Install the SLANT CCW connector to the coil connector in Port PRV2 of the UltraGlide XT valve.

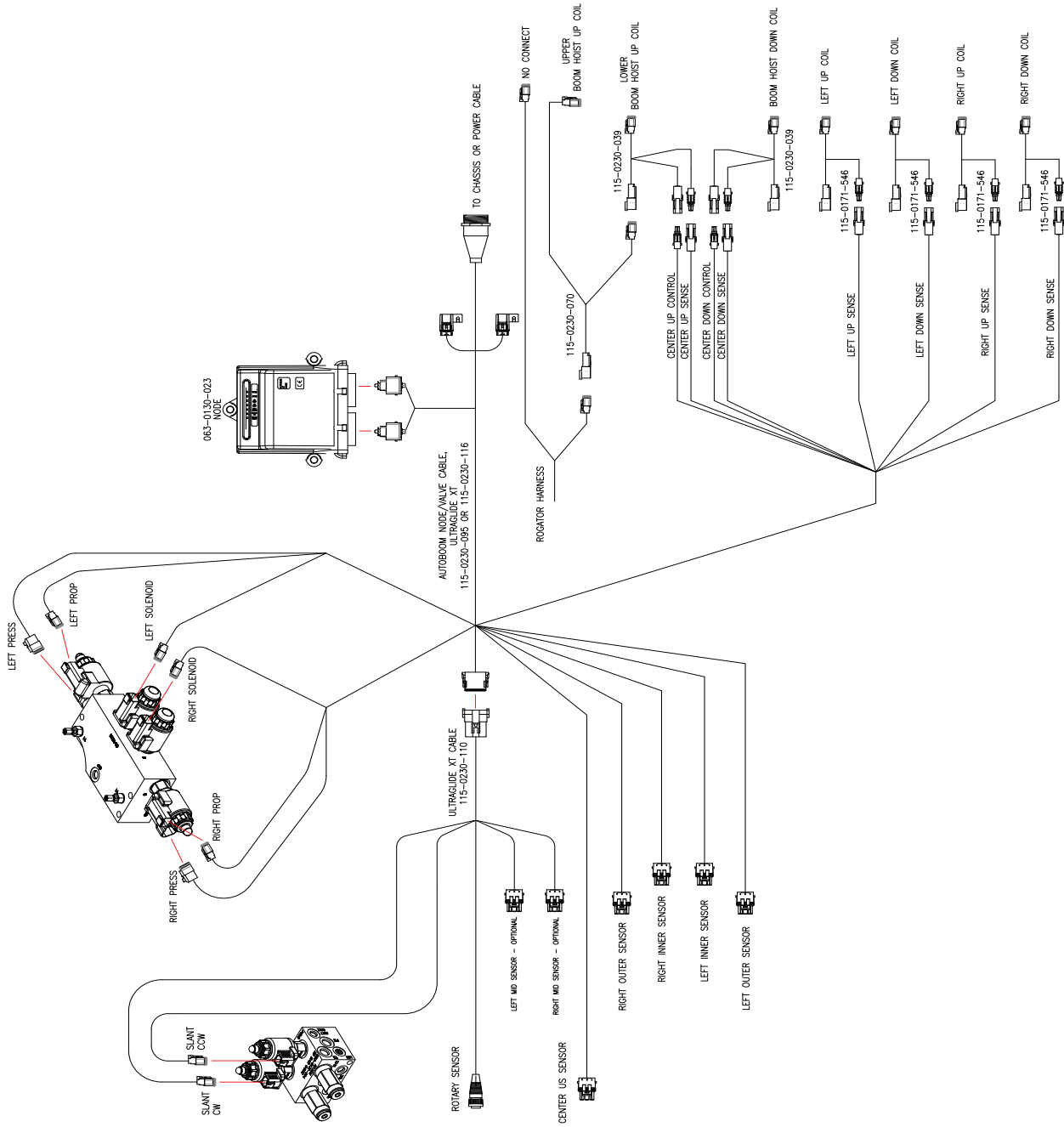
FIGURE 30. Slant Connectors Installed



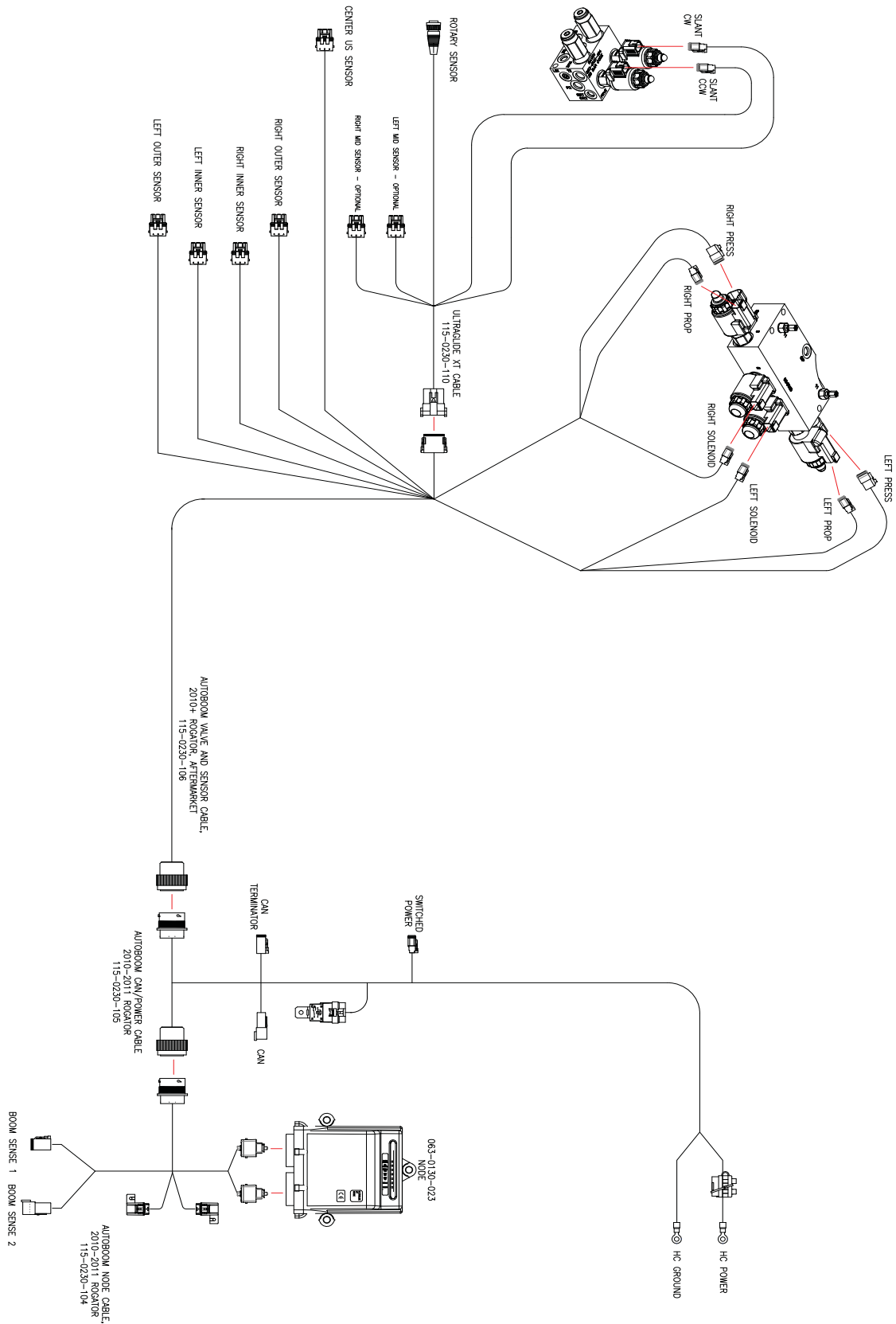
4. Connect the ROTARY SENSOR connector to the rotary sensor cable connector.

WIRING DIAGRAM

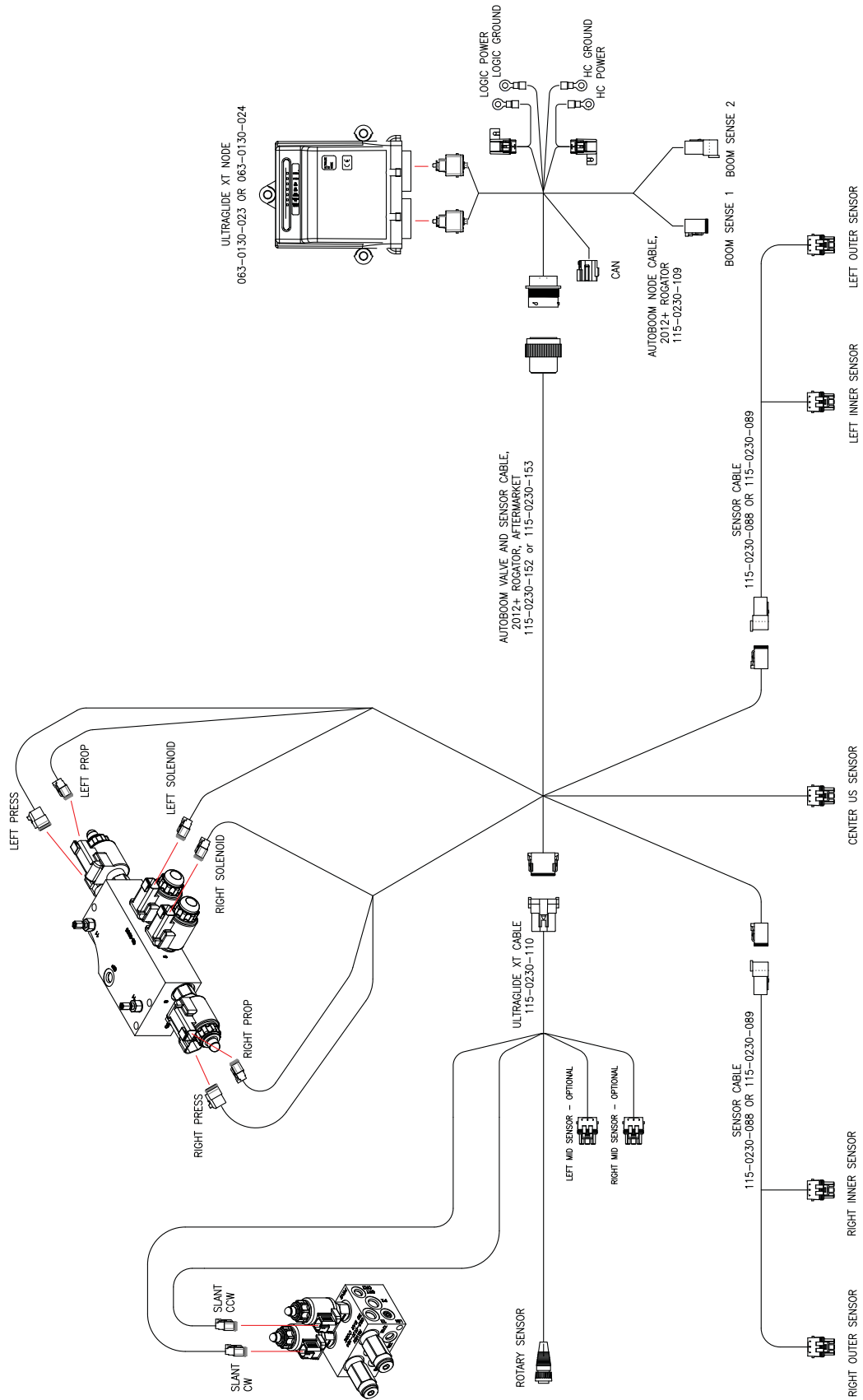
2009 WIRING SCHEMATIC



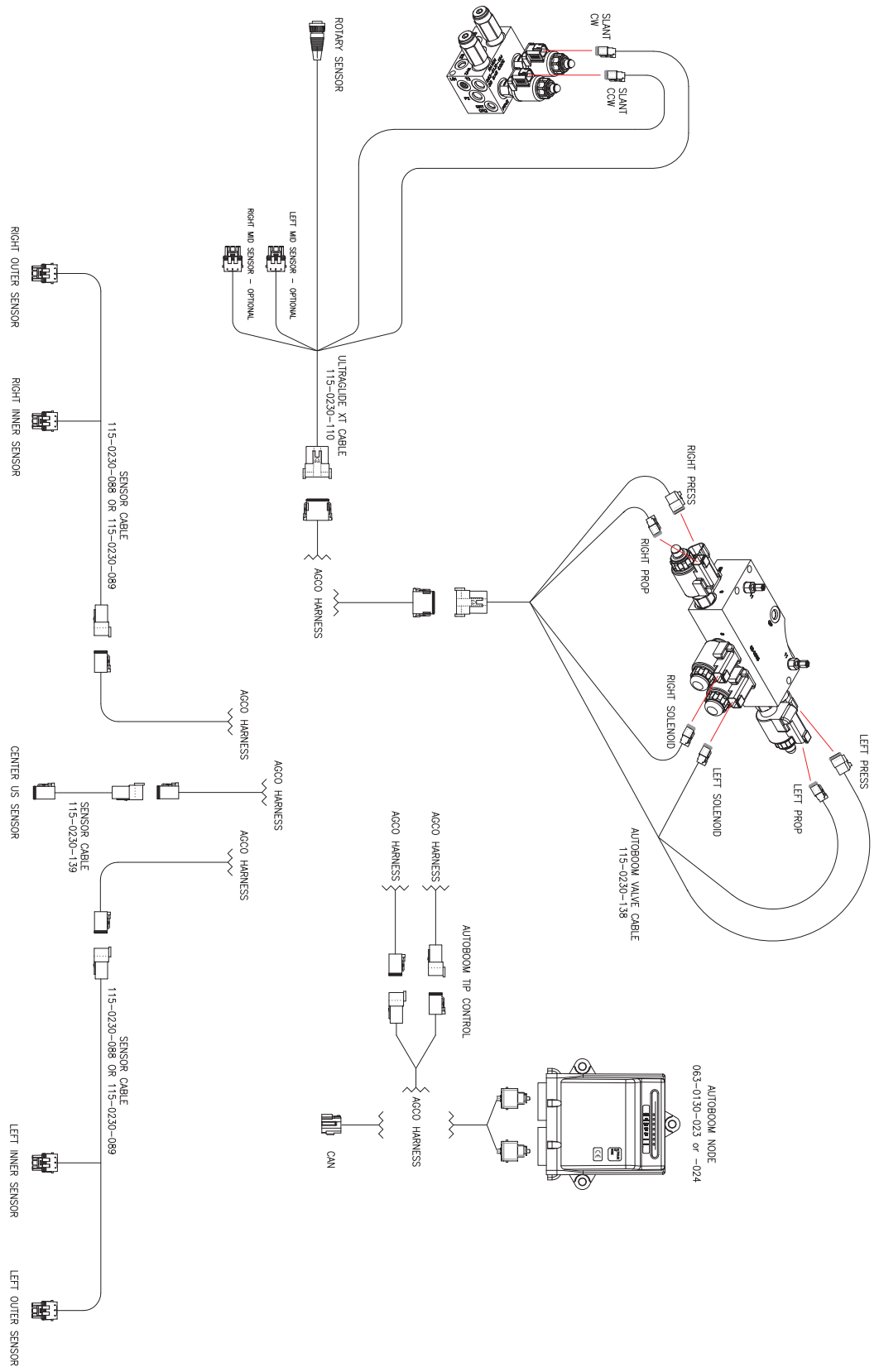
2010-2011 WIRING SCHEMATIC




2012-2017 WIRING SCHEMATIC




2018 & NEWER WIRING SCHEMATIC





WARNING

When starting the machine for the first time after installing UltraGlide XT, be sure that all persons stand clear in case a hose has not been properly tightened.



WARNING

Do not use hands to check for leaks. Hydraulic fluid under pressure can penetrate the skin and cause serious injury or death.

VERIFY THE AUTOBOOM HYDRAULIC SYSTEM INSTALLATION

1. Turn on the machine.
2. Double-check all fitting and hose connections to ensure that:
 - Hoses are not rubbing on or interfering with moving parts.
 - Hydraulic fluid is not leaking from the system.
3. Press and hold the UltraGlide XT manual control buttons to purge air out of the XT cylinders and hoses.

NOTE: Air must be purged from the system before performing the system calibration. If air pockets are present, the booms may not move consistently. Air is introduced into the hydraulic system during the AutoBoom system installation, whenever the hydraulic system is purged for maintenance, or when fittings are loosened or disconnected.

VERIFY THE ULTRAGLIDE XT WIRING

1. Navigate to the AutoBoom Diagnostics page that contains the manual boom control functions.
2. Press the button to manually rotate the boom clockwise via the UltraGlide XT system, verifying that the boom rotates clockwise as viewed from behind the machine.

3. Press the button to manually rotate the boom counterclockwise via the UltraGlide system, verifying that the boom rotates counterclockwise as viewed from behind the machine.

NOTE: If the boom rotates in the wrong direction, the UltraGlide XT valve harness corrections may need to be changed. Refer to Install the Valve Harness section on page 61 for further information.

NOTE: If there are issues with the AutoBoom system, turn off the machine and correct them immediately. For additional assistance, refer to the AutoBoom UltraGlide XT Calibration & Operation Manual (P/N 016-0130-062) or contact your local Raven dealer.

CALIBRATE THE AUTOBOOM ULTRAGLIDE XT SYSTEM

Refer to the AutoBoom UltraGlide XT Calibration & Operation Manual (P/N 016-0130-062) for instructions on calibrating the system, adjusting system settings, and system operation.

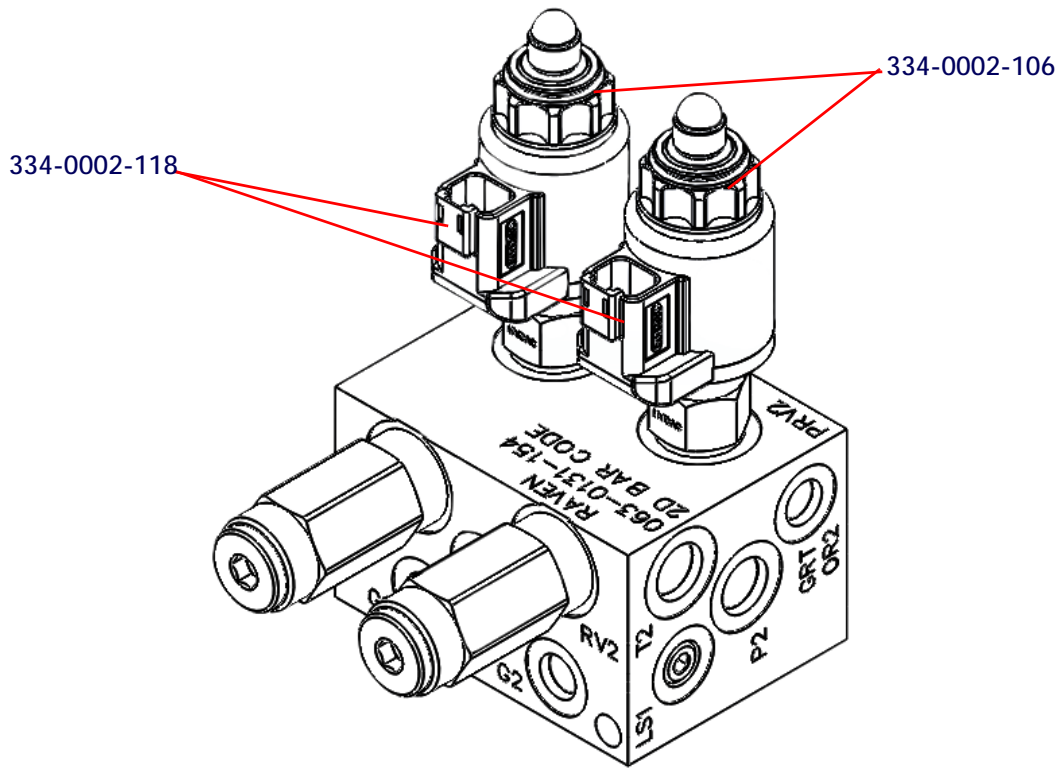
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REPLACEMENT PARTS

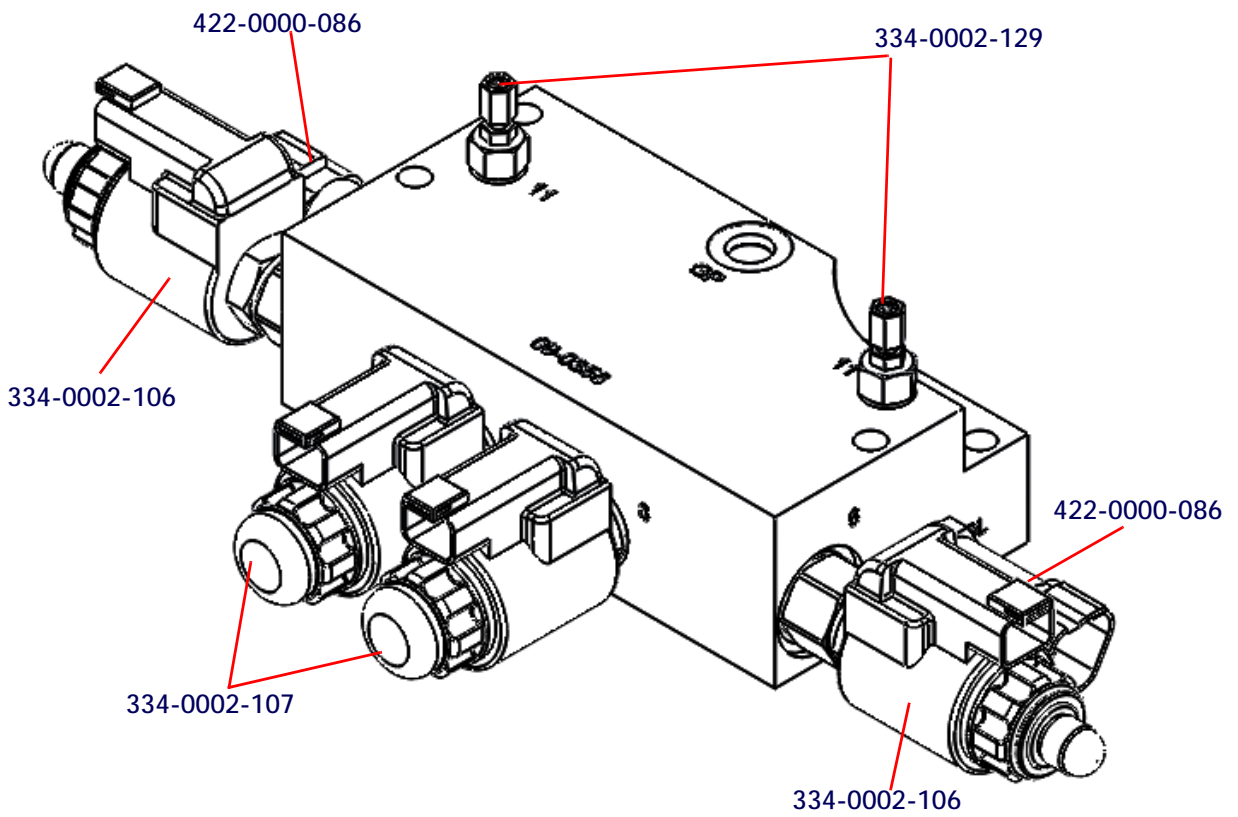
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This section contains replacement part diagrams for the PowerGlide Plus and UltraGlide systems. Refer to these diagrams when calling to request replacement parts.

VALVE

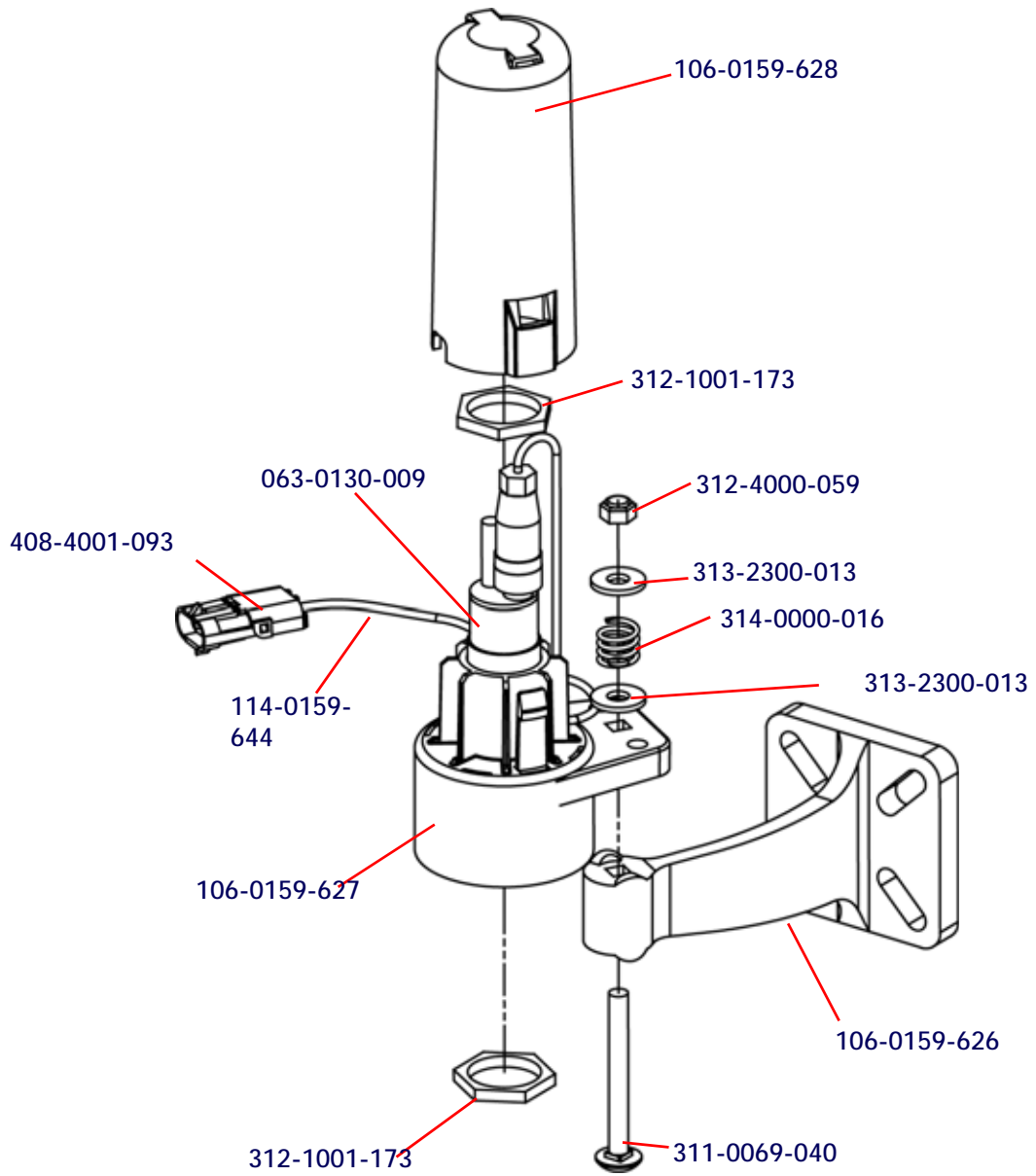


063-0131-154
Valve Assembly, Hydraulic
AutoBoom XT



063-0131-131
Valve AutoBoom,
Add-On Hydraulic

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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.