

AutoBoom® XRT

Installation Manual for

Fendt RoGator 900 Series

P/N 016-0237-052 Rev. A Mar 2023 E44915



Table of Contents

AutoBoom® XRT Installation Manual for Fendt RoGator 900 Series	0
Table of Contents	i
Disclaimer	1
Important Safety Information	2
Field Computers, Displays, and Control Consoles	3
Hydraulic Safety	3
Electrical Safety	4
Touch Screen	5
Recommendations and Best Practices	6
Point of Reference	6
Preparing for Install	6
Hose Routing	6
Harness Routing	7
Support Resources	10
Product Information and Support	10
Updates	10
Warranty Service and Repair	11
Training Tutorials and Videos	11
Raven Slingshot®	12
Social Media and Raven Podcast	12
Installation Overview	13
Prepare for Installation	14
Recommendations	14
Tools Needed	14
Point of Reference	15
Kits	16

Additional AGCO Parts	18
Install the Damper	19
Mount the Boom Sensors	22
Boom Sensor Mounting Locations	22
Mount the Boom Sensors	22
Mount the Center Sensor	25
Connect the Harness to the Sensors	26
ABM Node Installation	27
Install the Hydraulic Cartridges	29
System Drawings	32
AutoBoom® XRT, Fendt RoGator, Aftermarket Cabling (P/N 054-0237-042 Pg. 2)	33
Limited and Extended Warranties	34
Limited Warranty	34
What does this warranty cover?	34
How long is the coverage period?	34
How can I get service?	34
What will Raven Industries do?	34
What is not covered by this warranty?	34
Extended Warranty	35
What does this warranty cover?	35
Do I need to register my product to qualify for the extended warranty?	35
Where can I register my product for the extended warranty?	35
How long is the extended warranty coverage period?	35
How can I get service?	36
What will Raven Industries do?	36
What is not covered by this warranty?	36

Disclaimer

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

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

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

Important Safety Information

NOTICE

Follow the operation and safety instructions included with the implement and/or controller and read this manual carefully before installing, servicing, or operating this Raven system.

- Park the machine where the ground is level, clean, and dry.
- Bleed pressure from the hydraulic system and leave the machine turned off for the duration of the installation or maintenance process.

Follow the operation and safety instructions included with the implement and/or controller. Before installing or operating this Raven system, review and understand the information presented on this site.

- Failure to follow safety instructions may lead to equipment damage, personal injury, or death.
- Review equipment operation with your local dealer and follow all safety information presented on this site.
- Contact a local Raven dealer for assistance with any portion of the installation, service, or operation of Raven equipment.
- Follow all safety labels affixed to system components. Be sure to keep safety labels in good condition and replace any missing or damaged labels. Contact a local Raven dealer to obtain replacements for safety labels.

Observe the following safety measures when operating the implement after installing this Raven system:

- Do not operate this Raven system or any agricultural equipment while under the influence of alcohol or an illegal substance.

- Be alert and aware of surroundings while operating this Raven system.
 - Determine and remain a safe working distance from obstacles and bystanders. The operator is responsible for disabling the system when a safe working distance has diminished.
 - Do not operate the implement on any public road with this Raven system enabled.
 - Maintain control of the vehicle at all times during operation. For example,
 - Remain in the operator seat while the system is enabled and disable automated Raven controls before exiting the operator seat.
 - Maintain control of safety devices such as E-Stops at all times during operation.
 - Disable this Raven system prior to starting any maintenance work on the implement or components of this Raven system.
- Do not attempt to modify or lengthen any of the system control cables. Extension cables are available from a local Raven dealer.

Field Computers, Displays, and Control Consoles

- If the display will not be used for an extended period, it is best to remove the display from the machine and store it in a climate controlled environment. This may help to extend the service life of electronic components.
- To prevent theft, secure the display and GNSS antenna when leaving the machine unattended.

 **DANGER**

 **WARNING**

Hydraulic Safety

When installing or servicing a hydraulic system or hydraulic components, be aware that hydraulic fluid may be extremely hot and under high pressure. Caution must be exercised.

- Always wear appropriate personal protective equipment when installing or servicing hydraulic systems.
- Never attempt to open or work on a hydraulic system with the implement running.
- Always take care when servicing or opening a system that has been pressurized.

- The implement or machine must remain stationary and switched off with booms or implement sections unfolded and supported during installation or maintenance.
- Any work performed on the hydraulic system must be done in accordance with the machine manufacturer's approved maintenance instructions.
- Before installing hydraulic components, ensure there are no issues with the machine hydraulic system (e.g. pump issues, faulty hydraulic motors, fine metal deposits in the hydraulic lines, etc.).
- Take precautions to prevent foreign material or contaminants from being introduced into the implement hydraulic system. Contaminants that are able to bypass the hydraulic filtration system will reduce performance and may damage hydraulic components.
 - Verify that the hydraulic system is using fresh oil and the filters have been changed.
- Stand clear of the implement when starting the system for the first time after installing or servicing hydraulic components in case a hose has not been properly connected or tightened.

CAUTION

Electrical Safety

- Always verify that power leads are connected to the correct polarity as marked. Reversing the power leads could cause severe damage to the Raven system or other components.
- To prevent personal injury or fire, replace defective or blown fuses with only fuses of the same type and amperage.
- Do not connect the system power cable to the vehicle ignition or battery until all system components are mounted and all electrical connections are completed.
- Always start the machine before initializing this Raven system to prevent power surges or peak voltage.
- To avoid tripping and entanglement hazards, route cables and harnesses away from walkways, steps, grab bars, and other areas used by the operator or service personnel when operating or servicing the equipment.

Touch Screen

- Only touch the touch-screen with your finger or by using a special touch-screen stylus or pen. Operating the touch-screen with sharp objects may cause permanent damage to the screen.
- Only clean the screen using a damp cloth. Never use caustic or other aggressive substances.

Recommendations and Best Practices

Point of Reference

Instructions provided generally assume you are standing behind the machine facing toward the cab. More specific orientation may be provided as necessary to complete procedures.

Preparing for Install

- Ensure there are no issues with the machine hydraulic system (e.g., pump issues, faulty hydraulic motors, fine metal deposits in the hydraulic hoses, etc.).
- Verify that the machine hydraulic system is using fresh oil and that the filters have been recently changed.
- Ensure there are no issues with the steering system (e.g., worn bushings, faulty tie rod ends, improperly adjusted steering components, etc.)

Hose Routing

The word “hose” is used to describe any flexible, fluid carrying components. Use the following guidelines and recommendations when connecting and routing hoses while installing or maintaining this Raven system:

- Leave protective caps/covers over hose ends until connecting the end into the hydraulic system to help prevent contaminants from entering the system.

- Follow existing hose runs already routed on the implement as much as possible.
Proper hose routing should:
 - Secure hoses and prevent hoses from hanging below the implement.
 - Provide sufficient clearance from moving components and operational zones around shafts; universal joints and suspension components; pulleys, gears, belts, and chains; moving linkages, cylinders, articulation joints, etc.
 - Protect hoses from field debris and surrounding hazards (e.g. tree limbs, fence posts, crop stubble, dirt clumps or rocks that may fall or be thrown by the implement).
 - Protect hoses from sharp bends, twisting, or flexing over short distances and normal implement operation.
 - Ensure sufficient length for free movement of the implement during normal operation and prevent pulling, pinching, catching, or rubbing, especially in articulation and pivot points. Clamp hoses securely to force controlled movement of the hose.
 - Avoid abrasive surfaces and sharp edges such as sheared or flame cut corners, fastener threads or cap screw heads, hose clamp ends, etc.
 - Avoid areas where the operator or service personnel might step or use as a grab bar.
- Do not connect, affix, or allow hoses to come into contact with components with high vibration forces, hot surfaces, or components carrying hot fluids beyond the temperature rating of hose components.
 - Hoses should be protected or shielded if routing requires the hose to be exposed to conditions beyond hose component specifications.
- Avoid routing hoses in areas where damage may occur due to build up of material (e.g. dirt, mud, snow, ice, etc.).

Harness Routing

The word "harness" is used to describe any electrical cables and leads, both bundled and unbundled. Use the following guidelines and recommendations when connecting and routing harnesses while installing or maintaining this Raven system:

- Leave protective caps/covers over harness connectors until needed to avoid dirt and moisture from contaminating electrical circuits.

- Secure the harness to the frame or solid structural members at least every 12 in [30 cm].
- Follow existing harness runs already routed on the implement as much as possible. Proper harness routing should:
 - Secure harnessing and prevent the harness from hanging below the implement.
 - Provide sufficient clearance from moving components and operational zones around shafts; universal joints and suspension components; pulleys, gears, belts, and chains; moving linkages, cylinders, articulation joints, etc.
 - Protect harnessing from field debris and surrounding hazards (e.g. tree limbs, fence posts, crop stubble, dirt clumps or rocks that may fall or be thrown by the implement).
 - Protect harnessing from sharp bends, twisting, or flexing over short distances and normal implement operation.
 - Connectors and splices should not be located at bending points or in harness sections that move.
 - Ensure sufficient length for free movement of the implement during normal operation and prevent pulling, pinching, catching, or rubbing, especially in articulation and pivot points. Clamp harnessing securely to force controlled movement of the harness.
 - Avoid abrasive surfaces and sharp edges such as sheared or flame cut corners, fastener threads or cap screw heads, hose clamp ends, etc.
- Do not connect, affix, or allow harnessing to come into contact with components with high vibration forces, hot surfaces, or components carrying hot fluids beyond the temperature rating of harness components.
 - Harnessing should be protected or shielded if routing requires the hose to be exposed to conditions beyond harnessing component specifications.
- Avoid routing harnesses in areas where damage may occur due to build up of material (e.g. dirt, mud, snow, ice, etc.).
- Avoid routing harnesses in areas where the operator or service personnel might step or use as a grab bar.

Note: Avoid applying direct spray or pressure washing of electrical components and connections. High pressure streams and sprays can penetrate seals, cause corrosion, or otherwise damage electrical components. When performing maintenance:

- Inspect electrical components and connectors for corrosion, damaged pins or housings, etc. Repair or replace components or harnessing as necessary.
- Ensure connectors are kept clean and dry. Apply dielectric grease to the sealing surfaces of all connections exposed to moisture, dirt, debris, and other contaminants. Repair or replace harnessing as necessary.
- Clean electrical components with pressurized air, aerosol electrical cleaning agent, or low pressure rinse.
- Remove visible surface water from electrical components and connections using pressurized air or an aerosol cleaning agent. Allow components to dry thoroughly before reconnecting cables.

Support Resources

Note: Please review the Raven Applied Technology product "Disclaimer" on page 1 as well as the "Limited and Extended Warranties" on page 34 information.

Product Information and Support

RavenPrecision.com offers:

- Product features and benefits
- compatibility guide for other Raven components and systems
- Resources to help find an authorized Raven dealer near you
- Dealer login options for various Raven portals including [EDGE](#) and [Slingshot®](#).

Portal.RavenPrecision.com offers:

- Application drawings and replacement parts diagrams
- Online [conversion calculators](#)
- Software and firmware updates for Raven components
- User assistance and product documentation
- Product warranty registration and activation key requests
- Product documentation, application drawings, and updates

Or visit the Raven Public Knowledge Base (PKB) at <https://ravenind.force.com/ATDSupport/s/>.

Updates

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

<https://portal.ravenprecision.com>

Sign up for email alerts and you will be automatically notified when updates for Raven products are available.

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

Your feedback will help shape the future of our product documentation and the overall service we provide. We want to see ourselves as our customers see us and are eager to learn how we have been helping you or how we could do better.

To serve you best, please send an email with the following information to techwriting@ravenind.com

- 016-0237-052 Rev. A
- AutoBoom® XRT Installation Manual for Fendt RoGator 900 Series
- Any comments or feedback (please include URLs, chapter, or page numbers as 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.

We thank you for your time.

Warranty Service and Repair

Review the [Product Service and Repair](#) page for additional details about what is not covered under warranty, general repair pricing, and locations of authorized repair centers as well as to complete a Return of Materials Authorization (RMA) form to return your Raven products for warranty or repair.

Note: *An RMA must accompany all products returned to Raven for inspection or repair, including returns to authorized repair centers in North America. Returns received without a valid RMA may be returned at customer expense.*

Training Tutorials and Videos

Video tutorials and additional training content can be found on Raven EDGE at EDGE.RavenPrecision.com.

Raven Slingshot®

Information regarding Slingshot® products and services may be found at RavenSlingshot.com.

Social Media and Raven Podcast

Raven invites you to follow us on your favorite social media!



The Raven Precision Podcast may be found at RavenPrecision.podbean.com or on [Apple iTunes](#), [Google Play](#), and [Spotify](#).

Installation Overview

The AutoBoom® XRT system is designed to provide automated boom height adjustment for agricultural equipment.

This installation procedure applies to the following machines:

MAKE: Fendt RoGator

MODEL: 900 Series

YEAR: 2023 and Newer



Prepare for Installation

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

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

Raven Industries recommends the following when installing the AutoBoom® XRT 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® XRT system:

- Standard-sized wrenches
- Cable ties

- Set of tools
- Metric wrenches

Point of Reference

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

Kits

This section contains a list of kits available depending on machine features. For a full list of kit contents, refer to the specific kits numbers listed below.

Model Year	Model	Series	Boom Material	Boom Length	Kit Numbers
2022 and Newer	Fendt RoGator	900	Steel	90'/100'	117-0237-052
				120'	117-0237-053
			Aluminum		120'/132'
				117-0237-054	
					117-0237-008 (Radar Sensor Add-on)

AutoBoom® XRT 2 Radar Upgrade Kit for Fendt RoGator, 120' Steel Boom (P/N 117-0237-008 Rev. A)

THIS KIT TO CONTAIN THE FOLLOWING ITEMS LISTED BELOW:

ITEM #	QTY	PART #	DESCRIPTION
1	1	053-0159-079	BOX, SHIPPING
2	2	063-0173-962	SENSOR, BOOM HEIGHT, RADAR, BAUMER
3	2	107-0235-032	BRACKET, RADAR SENSOR, AGCO
4	1	053-0159-015	ENVELOPE, PLASTIC
5	4	107-0171-611	U-BOLT, 1-9/16" W X 2-1/2" L X 3/8"-16 THREAD, ZINC PLATED
6	4	107-0171-613	U-BOLT, 1-1/8" W X 2" L X 3/8"-16 THREAD, ZINC PLATED
7	4	311-0050-255	BOLT, 1/4"-20 X 5/8" PHILLIPS PAN HEAD
8	4	312-4000-164	NUT, 1/4"-20, NYLON LOCKING, SS
9	8	312-4000-252	NUT, FLANGE LOCK, 3/8"
10	2	115-0235-190	CABLE, XRT, 120' STEEL BOOM, FENDT ROGATOR

 AutoBoom® XRT Kit for Fendt RoGator, 90'/100' Steel Boom (P/N 117-0237-052 Rev. A)

THIS KIT TO CONTAIN THE FOLLOWING ITEMS LISTED BELOW:

ITEM #	QTY	PART #	DESCRIPTION
1	1	053-0159-079	BOX, SHIPPING (LABELED BOX 1 OF 3)
2	1	016-0171-649	SHEET, WARRANTY/HELP
3	1	063-0173-977	XRT, ABM WITH AUTOBOOM UNLOCK, AGCO
4	1	053-0159-015	ENVELOPE, PLASTIC
5	2	311-0050-231	BOLT, MACHINE HEX HEAD, 1/4-20 X 1.25 LONG, STAINLESS S
6	2	312-4000-164	NUT, 1/4-20, NYLON LOCKING, SS
7	2	313-2301-810	WASHER, FLAT, 1/4, NARROW
8	1	117-0237-010	(LABELED BOX 2 OF 3) KIT, AUTOBOOM XRT, BOOM, FENDT ROGATOR 90/100' STEEL
9	1	117-0237-013	(LABELED BOX 3 OF 3) KIT, AUTOBOOM XRT, DAMPER, FENDT ROGATOR

 AutoBoom® XRT Kit for Fendt RoGator, 120' Steel Boom (P/N 117-0237-053 Rev. A)

THIS KIT TO CONTAIN THE FOLLOWING ITEMS LISTED BELOW:

ITEM #	QTY	PART #	DESCRIPTION
1	1	053-0159-079	BOX, SHIPPING (LABELED BOX 1 OF 3)
2	1	016-0171-649	SHEET, WARRANTY/HELP
3	1	063-0173-977	XRT, ABM WITH AUTOBOOM UNLOCK, AGCO
4	1	053-0159-015	ENVELOPE, PLASTIC
5	2	311-0050-231	BOLT, MACHINE HEX HEAD, 1/4-20 X 1.25 LONG, STAINLESS S
6	2	312-4000-164	NUT, 1/4-20, NYLON LOCKING, SS
7	2	313-2301-810	WASHER, FLAT, 1/4, NARROW
8	1	117-0237-011	(LABELED BOX 2 OF 3) KIT, AUTOBOOM XRT, BOOM, FENDT ROGATOR, 120' STEEL
9	1	117-0237-013	(LABELED BOX 3 OF 3) KIT, AUTOBOOM XRT, DAMPER, FENDT ROGATOR

AutoBoom® XRT Kit for Fendt RoGator, 120'/132' Aluminum Boom (P/N 117-0237-054 Rev. A)

THIS KIT TO CONTAIN THE FOLLOWING ITEMS LISTED BELOW:

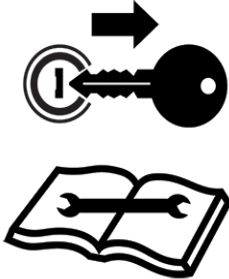
ITEM #	QTY	PART #	DESCRIPTION
1	1	053-0159-079	BOX, SHIPPING (LABELED BOX 1 OF 3)
2	1	016-0171-649	SHEET, WARRANTY/HELP
3	1	063-0173-977	XRT, ABM WITH AUTOBOOM UNLOCK, AGCO
4	1	053-0159-015	ENVELOPE, PLASTIC
5	2	311-0050-231	BOLT, MACHINE HEX HEAD, 1/4-20 X 1.25 LONG, STAINLESS S
6	2	312-4000-164	NUT, 1/4-20, NYLON LOCKING, SS
7	2	313-2301-810	WASHER, FLAT, 1/4, NARROW
8	1	117-0237-010	(LABELED BOX 2 OF 3) KIT, AUTOBOOM XRT, BOOM, FENDT ROGATOR 90/100' STEEL
9	1	117-0237-013	(LABELED BOX 3 OF 3) KIT, AUTOBOOM XRT, DAMPER, FENDT ROGATOR

Additional AGCO Parts

Additional cartridge valves must be ordered from AGCO parts to complete an installation. The AGCO part number is ACX2762950 and contains the two cartridge valves assemblies needed for a successful installation.

Install the Damper

⚠ WARNING



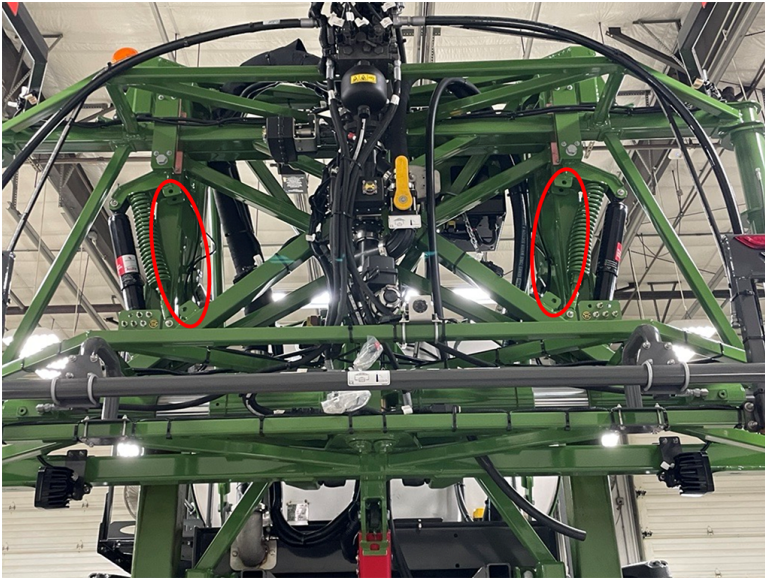
The implement or machine must remain stationary and switched off with booms or implement sections unfolded and supported during installation or maintenance.

1. Unfold the booms.
2. Locate the shock on the right side of the machine and remove the bolts securing it to the machine.



3. Compress the shock to remove it from the mounting position.

4. Identify the damper installation location.



5. It may be necessary to compress the dampers to fit into the spacing during installation. To compress a damper:
 - a. Connect two ends of a ratchet strap to each other.
 - b. Place the ratchet strap around the ends of the damper like a belt.
 - c. Tighten the ratchet strap until the damper is the desired length.
 - d. Remove the ratchet strap before installing the damper.
6. With the rod end of the damper pointing down, insert the rod into the mounting position.
7. Install the provided 5/8" clevis pins into the inner mounting holes to secure the bottom of the damper.
8. Have a second person pull down on the right boom to increase the gap for the damper installation.

9. Install the provided 5/8" clevis pins into the top mounting holes to secure the top of the damper.



10. Repeat the procedure for the left shocks and dampers on the left side of the machine.

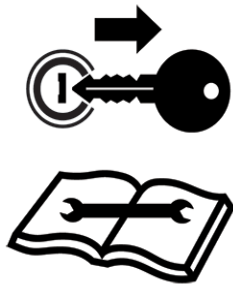
Mount the Boom Sensors

Boom Sensor Mounting Locations

Sensor mounting locations vary by boom configuration. If an object enters the sensor's blind range unexpectedly, a false return to the sensor could occur. To ensure optimal operation of the AutoBoom® XRT system and to protect the sprayer boom, the sensor should be mounted behind the boom structure (if possible), above the lowest hanging part of the boom.

Mount the Boom Sensors

⚠ WARNING



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

1. The table below provides the approximate mounting locations for various boom widths. The information on this table is for reference only. If there is interference or other issues with these mounting locations, mount the sensors as close to these locations as possible.

Boom Width	Boom Type	Inner Sensor Mounting Distance from Boom Pivot Point	Outer Sensor Mounting Distance from Boom Pivot Point
120'	Steel	322"	620"
100'	Steel	290"	495"
90	Steel	290"	435"
120'	Aluminum	330"	658"
132'	Aluminum	330"	730"

Note: The numbers in the table above are the approximate distance. As a rule, the sensor should be mounted half way between two spray tips to minimize potential drift interference.

2. Install the radar sensors (P/N 063-0173-962) on the sensor mounting brackets (P/N 107-0235-032) using two 1/4"-20 x 5/8" Phillips pan head bolts (P/N 311-0050-255) and two 1/4"-20 nylon locking nuts per sensor (P/N 312-4000-164).

Note: Install two of the sensors in one orientation and three in the other orientation on the bracket so, when installed, the sensor connection is facing towards the center of the machine.



3. Mount the boom sensor assemblies on the back of the left-outer boom sections using 1-9/16" W x 2" L x 3/8" thread U-bolts and 3/8"-16 flanged lock nuts.



4. Mount the inner boom sensor assemblies using 1-9/16" W x 2-1/2" L x 3/8" thread U-bolts and 3/8"-16 flanged lock nuts.



Mount the Center Sensor

1. Mount the center sensor assembly to the middle of the center rack using 1-9/16" W x 2-1/2" L x 3/8" thread U-bolts and 3/8"-16 flanged lock nuts. The center sensor may be offset from center due to the structure of the center rack.



Note: *The center sensor can be moved off-center to be located directly above a row for better crop-detection performance.*

Connect the Harness to the Sensors

1. Starting at the outside sensor on the right boom and working towards the center right, connect the secondary boom cable to the outside height sensor.

Note: Refer to "System Drawings" on page 32 if desired.

2. Route the secondary boom harness along the boom towards the center of the machine, and connect it to the primary boom harness.

Note: Leave sufficient slack in the harness to prevent pulling on connectors during operations such as boom folding.

3. Route the primary boom harness along the boom towards the center of the machine, and connect the 6-pin receptacle of the radar boom harness to the 6-pin plug on the X0100 left boom circuit machine harness.
4. Remove the dust cap from the first radar connection on the inner boom harness and plug the radar connection into the inner height sensor.
5. Connect the center radar sensor using the provided connector on the X0500 cable.
6. Locate the 2-pin connector labeled **1** near the damper on the left side of the machine and plug the 2-pin connector to the damper connection.
7. Repeat this process for the boom on the right side of the machine.

ABM Node Installation

1. Locate the electrical compartment on the rear catwalk of the sprayer and remove the cover.



2. Remove the two bolts securing the fuse box bracket to the machine. This allows access to the ABM mounting location.



3. Use the two 1/4-20 x 1.25" nuts and bolts provided in the kit to mount the ABM node.

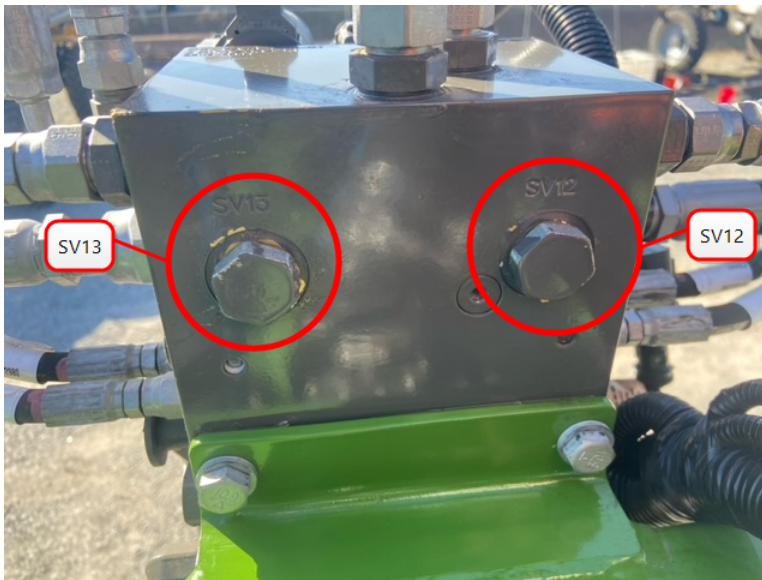
4. Connect the two loose 12-pin DTM connectors into the ABM node.



5. Using the previously removed screws, reinstall the fuse box bracket.
6. Replace the cover on the electrical box.

Install the Hydraulic Cartridges

1. Locate the hydraulic block located near the center rack.
2. Remove the cavity plug located in the two ports labeled "SV12" and "SV13" as shown in the image below.



3. Install the cartridge valve assemblies in the SV12 and SV13 ports as shown in the image below.



4. Remove the dust caps from the two 2-pin connectors labeled "X5036" and "X5034."



5. Connect the **X5034** connector to the solenoid in the **SV13** port.



6. Connect the **X5036** connector to the solenoid in the **SV12** port.

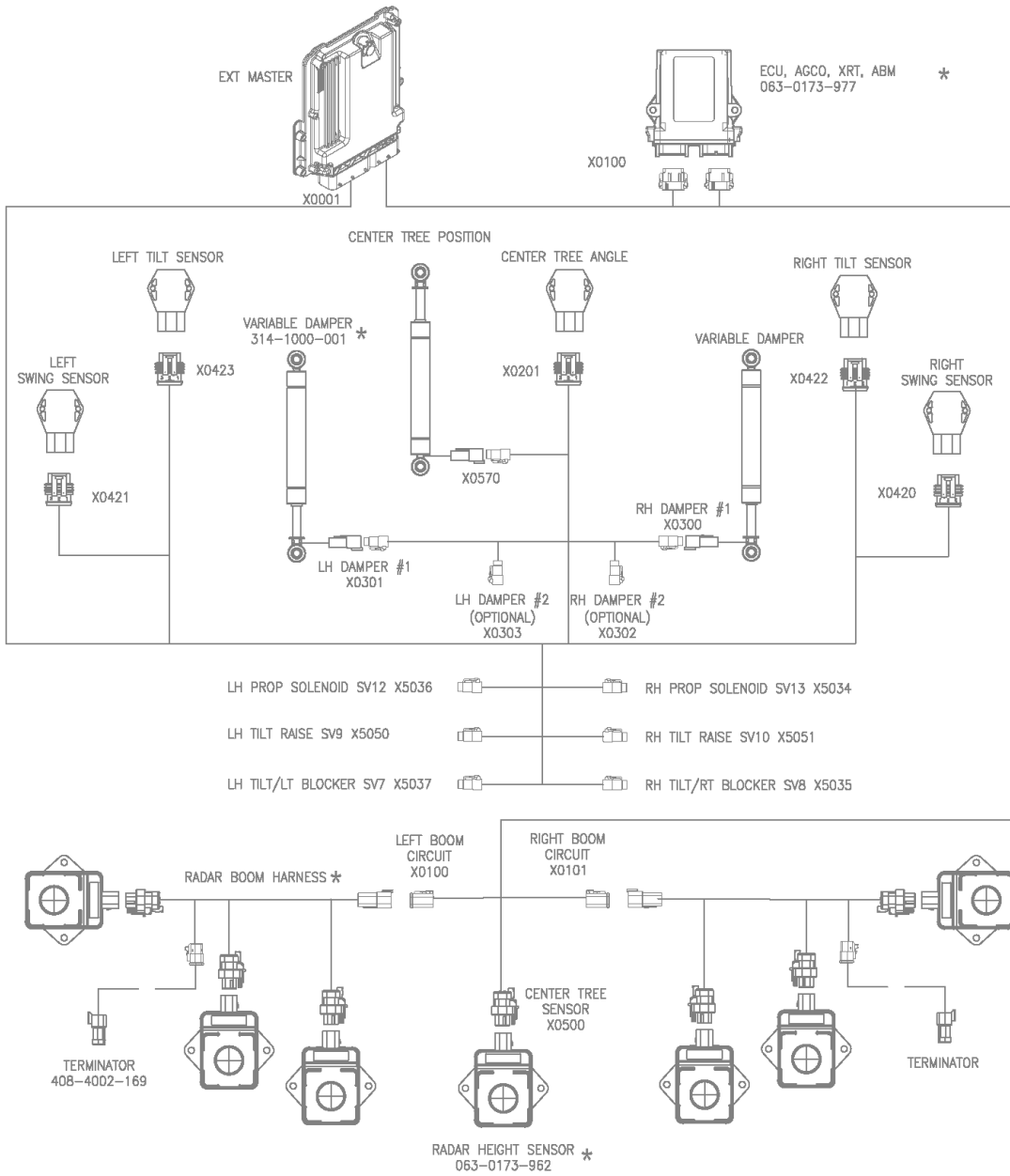


System Drawings

Note: *System drawings begin on the next page.*

AutoBoom® XRT, Fendt RoGator, Aftermarket Cabling (P/N 054-0237-042 Pg. 2)

AUTOBOOM XRT, FENDT ROGATOR, AFTERMARKET CABLING



ITEM	DESCRIPTION	FENDT ROGATOR 90/100' STEEL BOOM IN KIT P/N: 117-0237-052	FENDT ROGATOR 120' STEEL BOOM IN KIT P/N: 117-0237-053	FENDT ROGATOR 120/132' ALUMINUM BOOM IN KIT P/N: 117-0237-054	RADAR SENSOR ADD-ON KIT FENDT 120' STEEL BOOM IN KIT P/N: 117-0237-008	RADAR SENSOR ADD-ON KIT FENDT 120/132' ALUMINUM BOOM IN KIT P/N: 117-0237-008
1	XRT ABM	063-0173-877	063-0173-877	063-0173-877	—	—
2	RADAR SENSOR (QTY 5)	063-0173-882	063-0173-962	063-0173-962	—	—
3	VARIABLE DAMPER (QTY 2)	314-1000-001	314-1000-001	314-1000-001	—	—
4	RADAR BOOM HARNESS (QTY 2)	115-0235-182	115-0235-190	115-0235-191	115-0235-180	115-0235-191
5	RADAR SENSOR (ADD ON) (QTY 2)	—	—	—	063-0173-962	063-0173-962

NOTES:
 - TERMINATORS P/N 408-4002-169 ARE INCLUDED WITH RADAR HARNESS
 * INDICATES AFTERMARKET COMPONENT

Limited and Extended Warranties

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 36 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 completed RMA form, Certificate of Decontamination, and retail 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 (at our discretion) repair or replace this product or any component of the product found to be defective during the warranty period. Replacement will be made with a new or remanufactured product or component. Standard return freight will be paid, regardless of 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 outside our facility 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, improper installation and maintenance are not covered by this warranty.
- Worn/Chafed hoses and cables.
- Items in contact with fluids and chemicals including seals and O-rings.
- Software downloads and updates.
- Tamper-Evident label broken or customer disassembly.
- Any customer modification to the original product outside normal calibration and adjustments, without written approval.
- Intentional modification to cables.
- Failures due to lack of cleaning or preventive maintenance, and any condition, malfunction or damage not resulting from defects in material or workmanship.
- Items in contact with fluids or chemicals, returned without proper cleaning, decontamination and documentation.

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 <https://portal.ravenprecision.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 completed RMA form, Certificate of Decontamination, and Extended Warranty Registration Number) 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 warranty claim, Raven Industries (at our discretion) repair or replace this product or any component of the product found to be defective during the warranty period. Replacement will be made with a new or remanufactured product or component. Standard return freight will be paid, regardless of 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 outside our facility 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, improper installation and maintenance are not covered by this warranty.
- Worn/Chafed hoses and cables.
- Items in contact with fluids and chemicals including seals and O-rings.
- Software downloads and updates.
- Tamper-Evident label broken or customer disassembly.

- Any customer modification to the original product outside normal calibration and adjustments, without written approval.
- Intentional modification to cables.
- Failures due to lack of cleaning or preventive maintenance, and any condition, malfunction or damage not resulting from defects in material or workmanship.
- Items in contact with fluids or chemicals, returned without proper cleaning, decontamination and documentation.

