

RCM - Sprayer Installation Manual for AGCO RoGator C-Series (RG900, RG1100, RG1300)

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SAFETY

NOTICE

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

- Follow all safety information presented within this manual. Review implement operation with your local dealer.
- 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 and remain in the operator seat at all times when operating this Raven system.
 - Do not operate the implement on any public road with this Raven system enabled.
 - Disable this Raven system before exiting the operator seat.
 - 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.
 - 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.

WARNING

AGRICULTURAL CHEMICAL SAFETY

Follow all federal, state, and local regulations regarding the handling, use, and disposal of agricultural chemicals, products, and containers. Triple-rinse and puncture or crush empty containers before properly disposing of them. Contact a local environmental agency or recycling center for additional information.

- Always follow safety labels and instructions provided by the chemical manufacturer or supplier.
- Always wear appropriate personal protective equipment as recommended by the chemical and/or equipment manufacturer.
- When storing unused agricultural chemicals:
 - Store agricultural chemicals in the original container and do not transfer chemicals to unmarked containers or containers used for food or drink.
 - Store chemicals in a secure, locked area away from human and livestock food.
 - Keep children away from chemical storage areas.
- Fill, flush, calibrate, and decontaminate chemical application systems in an area where runoff will not reach ponds, lakes, streams, livestock areas, gardens, or populated areas.
- Follow all label instructions for chemical mixing, handling, and disposal.
- Avoid direct contact with agricultural chemicals or inhaling chemical dust or spray particulate. Seek immediate medical attention if symptoms of illness occur during, or soon after, use of agricultural chemicals or products.
- After handling or applying agricultural chemicals:
 - Thoroughly wash hands and face after using agricultural chemicals and before eating, drinking, or using the restroom.
 - Thoroughly flush or rinse equipment used to mix, transfer, or apply chemicals with water after use or before servicing any component of the application system.

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 power leads to the 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.

RECOMMENDATIONS AND BEST PRACTICES

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.

IMPORTANT: 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.

MAKE AND MODEL COMPATIBILITY

The Raven Rate Control Module (RCM) - Sprayer is a product control system which allows for precise boom section control during sprayer application. The RCM - Sprayer controls the existing AGCO ProStop-E valves to create up to 36 sections across the boom width, giving the user consistent spray coverage and product control.

RCM - Sprayer is built on the ISOBUS communication platform which allows the system to work with most ISO Universal Terminals (UTs) and task controllers, including the Viper® 4.

This manual is intended to provide installation instructions on the following equipment:

TABLE 1. Compatible Equipment Information

Make and Model	Boom Sections	Nozzle Body	RCM - Sprayer	Kit Number
AGCO RoGator C-Series (RG900, RG1100, RG1300)	35/36 Sections	ProStop-E Compatible	Raven RCM - Sprayer	117-7100-038
			AGCO RCM - Sprayer	117-7100-037

SECTION SPACING

The information located in Table 2 on page 6 and in Table 3 on page 7 is required for the machine configuration process on the Universal Terminal. Refer to the RCM - Sprayer Calibration and Operation Manual, section Calibration Wizard, for additional machine assistance with system setup or operation.

NOTE: Each column shown in Table 2 on page 6 and in Table 3 on page 7 identifies a specific sprayer boom configuration. Boom width, in feet, is the first number. Nozzle spacing, in inches, is the second number. As an example, a 90 foot boom with 10 inch nozzle spacing will be represented as 90'/10".

TABLE 2. Section Widths Per Boom Width and Nozzle Spacing (90'-100')

Switch	Section	90' / 10"	90' / 15"	90' / 20"	100' / 10"	100' / 15"	100' / 19"	100' / 20"
1	1	20	15	20	20	15	19	20
	2	20	15	20	30	30	19	20
	3	20	15	20	30	30	38	20
	4	20	30	20	30	30	38	20
	5	30	30	20	30	30	38	20
	6	30	30	20	30	30	38	20
	7	30	30	20	30	30	38	40
2	8	30	30	20	30	30	19	40
	9	30	30	20	30	30	19	40
	10	30	30	20	40	30	38	20
	11	30	30	40	40	30	38	40
	12	30	30	40	40	45	38	40
	13	40	30	40	40	45	38	40
	14	40	45	40	40	45	38	40
	15	40	45	40	40	45	57	40
3	16	40	45	40	40	45	38	40
	17	40	30	40	40	30	38	40
	18	30	45	60	30	45	19	60
4	19	40	30	60	40	30	38	60
	20	40	45	40	40	45	38	40
	21	40	45	40	40	45	57	40
	22	40	45	40	40	45	38	40
	23	40	30	40	40	45	38	40
	24	30	30	40	40	45	38	40
	25	30	30	40	40	30	38	40
	26	30	30	40	40	30	38	40
5	27	30	30	20	30	30	19	20
	28	30	30	20	30	30	19	40
	29	30	30	20	30	30	38	40
	30	30	30	20	30	30	38	40
	31	30	30	20	30	30	38	20
	32	20	30	20	30	30	38	20
	33	20	15	20	30	30	38	20
	34	20	15	20	30	30	19	20
	35	20	15	20	20	15	19	20
	36			20				20

TABLE 3. Section Widths Per Boom Width and Nozzle Spacing (120'-132')

Switch	Section	120'/ 10"	120'/ 15"	120'/ 19"	120'/ 20"	120'/ 20" AL	132'/ 19" AL	132'/ 20" AL
1	1	40	30	57	20	40	38	40
	2	40	30	57	40	40	38	40
	3	40	45	57	40	40	38	40
	4	40	45	38	40	40	38	40
	5	40	45	38	40	40	38	40
	6	40	45	38	40	40	38	40
	7	40	45	38	40	40	38	40
	8	50	45	38	40	40	38	40
2	9	40	30	38	40	20	38	40
	10	40	30	38	40	40	57	40
	11	40	45	38	40	40	57	40
	12	40	45	38	40	40	57	40
	13	40	45	38	40	40	57	40
	14	40	45	38	40	40	57	40
	15	40	45	38	40	40	57	60
	16	50	45	38	40	40	76	60
3	17	40	30	38	40	40	38	60
	18	30	45	19	60	60	19	60
	19	40	30	38	60	60	38	60
4	20	50	45	38	40	40	76	60
	21	40	45	38	40	40	57	60
	22	40	45	38	40	40	57	60
	23	40	45	38	40	40	57	40
	24	40	45	38	40	40	57	40
	25	40	45	38	40	40	57	40
	26	40	30	38	40	40	57	40
	27	40	30	38	40	40	38	40
5	28	50	45	38	40	20	38	40
	29	40	45	38	40	40	38	40
	30	40	45	38	40	40	38	40
	31	40	45	38	40	40	38	40
	32	40	45	38	40	40	38	40
	33	40	45	57	40	40	38	40
	34	40	30	57	40	40	38	40
	35	40	30	57	40	40	38	40
	36				20	40		40

MACHINE CONFIGURATION NOTES

- The AGCO AccuTerminal does not need to have settings changed to function with RCM - Sprayer.
- The AGCO AccuTerminal and other ECUs should be updated to the latest software by an AGCO Service Provider. For 36 section control, the AGCO RoGator C Liquid EXT software must be updated to version 1.02 or newer.
- The Raven RCM - Sprayer ECU must be updated to software version of v21.2.1.7 or newer.
- When prompted to setup the machine configuration, complete the following steps:
 1. Refer to Table 2 on page 6 and Table 3 on page 7 to find the matching boom/spacing configuration column to the physical machine.
 2. Input the number of sections of the matching boom/spacing in the section setup screen as shown in Figure 1, "Section Setup - Number of Sections," below. There will be 35 or 36 sections based on the "Section" column in the tables above.

NOTE: It is not necessary to check the fence row option as this functionality is controlled via AGCO switches and cabling.

FIGURE 1. Section Setup - Number of Sections



3. Press Next to advance.

4. For each section, use the color coordination in Table 2 on page 6 or Table 3 on page 7 to select which switch the section will be mapped to as shown in Figure 2, “Switch Mapping - Assigning Sections,” below.

NOTE: Only use numbers 1-5 in the drop-down list for each section according to the color code in the tables.

FIGURE 2. Switch Mapping - Assigning Sections

Switch Mapping
Select the switch associated with the section.

Section	Switch	Section	Switch	Section	Switch
1	1	7	1	13	2
2	1	8	1	14	2
3	1	9	1	15	2
4	1	10	2	16	2
5	1	11	2	17	2
6	1	12	2	18	3

Switch Mapping
Select the switch associated with the section.

Section	Switch	Section	Switch	Section	Switch
19	3	25	4	31	5
20	4	26	4	32	5
21	4	27	4	33	5
22	4	28	5	34	5
23	4	29	5	35	5
24	4	30	5	36	5

NOTE: Number of switches may vary from the images shown above.

5. Ensure that the displayed values match the table, and then press Next.
6. For each section, enter the corresponding section width value from Table 2 on page 6 or Table 3 on page 7 as shown in Figure 3, “Section Setup - Section Widths,” below.

FIGURE 3. Section Setup - Section Widths

Section Setup
Enter the widths per section.

Section	Width (in)	Section	Width (in)	Section	Width (in)
1	20.0	7	40.0	13	40.0
2	40.0	8	40.0	14	40.0
3	40.0	9	40.0	15	40.0
4	40.0	10	40.0	16	40.0
5	40.0	11	40.0	17	40.0
6	40.0	12	40.0	18	60.0

Section Setup
Enter the widths per section.

Section	Width (in)	Section	Width (in)	Section	Width (in)
19	60.0	25	40.0	31	40.0
20	40.0	26	40.0	32	40.0
21	40.0	27	40.0	33	40.0
22	40.0	28	40.0	34	40.0
23	40.0	29	40.0	35	40.0
24	40.0	30	40.0	36	20.0

NOTE: Number of sections may vary from the images shown above.

7. Ensure the displayed selections are accurate, and then press Next.

INSTALLATION OVERVIEW

The recommended process for installing the RCM - Sprayer product control system is as follows:

1. Confirm RCM - Sprayer kit contents. See the *Kit Contents* section on page 11.
2. Mount the RCM - Sprayer mounting bracket to the frame and mount the RCM - Sprayer ECU. See the *RCM - Sprayer Installation* section on page 13.
3. Install the bulkhead cable in AGCO RoGator C ECU cabinet.
4. Route and connect the chassis and RCM - Sprayer cables. See the *Chassis Cable Routing and Connection* section on page 23.
5. Review the Post-Installation Notes for machine configuration tips.

REQUIRED COMPONENTS

The following components must be installed with the RCM - Sprayer nozzle control system:

- Updated software on field computers or control monitors and other ECUs. Contact your local AGCO dealer for the latest software.
- PWM pump control valve
- Raven compatible flow meter
- Raven compatible pressure transducer

TOOLS AND MATERIALS NEEDED

The following tools are recommended for completing the installation:

- SAE and metric sized wrenches and tools
- 1-1/2" hole saw
- Drill bit set and drill
- CorrosionX HD (recommended) or other dielectric contact treatment
- Cable ties (supplied)
- Phillips screwdriver
- Side cutters

POINT OF REFERENCE

The instructions provided in this manual assume the installer is standing behind the machine, looking toward the machine cabin.

KIT CONTENTS

FIGURE 4. Raven RCM - Sprayer Level 2 System for AGCO RoGator C Kit Components (P/N 117-7100-038 Rev. A)

QTY	PART #	DESCRIPTION
1	053-0159-193	BOX, SHIPPING, 25LX18WX13
1	063-0174-128B	RAVEN RCM - SPRAYER LEVEL 2
1	115-2005-018	CABLE, BULKHEAD, ROGATOR C, HAWKEYE 2
1	115-2005-019	CABLE, ECU BOX TO RCM, HAWKEYE 2
1	107-0235-015	PLATE, MOUNTING, REM/ABM, ROGATOR C
1	053-0159-015	ENVELOPE, PLASTIC
1	016-0171-649	SHEET, WARRANTY/HELP (016-0171-712) (016-0171-638)
1	053-0159-110	ENVELOPE, PLASTIC
1	311-4050-145K	BOLT, HEX, M6 X 65MM, ZINC
2	311-4050-147K	BOLT, HEX, M6 X 75MM, ZINC
3	312-4000-216	NUT, FLANGE, NYLOC, M6 X 1.0
3	313-1000-046	WASHER, M6
2	107-0171-616	U-BOLT, 2-9/16W X 3-1/2 L X 3/8-16 UNC, ZINC
4	312-1001-164	NUT, FLANGED LOCK, 3/8-16 UNC, ZINC
2	311-4050-159K	BOLT, HEX, M6-1 X 140MM, GRADE 8, CLASS II COATING
1	311-4050-154K	BOLT, HEX, M6-1 X 110MM, GRADE 8, CLASS II COATING

FIGURE 5. AGCO RCM - Sprayer Level 2 System for AGCO RoGator C Kit Components (P/N 117-7100-037 Rev. B)

QTY	PART #	DESCRIPTION
1	053-0159-193	BOX, SHIPPING, 25LX18WX13
1	063-0174-118	AGCO RCM - SPRAYER LEVEL 2
1	115-2005-018	CABLE, BULKHEAD, ROGATOR C, HAWKEYE 2
1	115-2005-019	CABLE, ECU BOX TO RCM, HAWKEYE 2
1	107-0235-015	PLATE, MOUNTING, REM/ABM, ROGATOR C
1	053-0159-015	ENVELOPE, PLASTIC
1	016-0171-649	SHEET, WARRANTY/HELP (016-0171-712) (016-0171-638)
1	053-0159-110	ENVELOPE, PLASTIC
1	311-4050-145K	BOLT, HEX, M6 X 65MM, ZINC
2	311-4050-147K	BOLT, HEX, M6 X 75MM, ZINC
3	312-4000-216	NUT, FLANGE, NYLOC, M6 X 1.0
3	313-1000-046	WASHER, M6
2	107-0171-616	U-BOLT, 2-9/16W X 3-1/2 L X 3/8-16 UNC, ZINC
4	312-1001-164	NUT, FLANGED LOCK, 3/8-16 UNC, ZINC
2	311-4050-159K	BOLT, HEX, M6-1 X 140MM, GRADE 8, CLASS II COATING
1	311-4050-154K	BOLT, HEX, M6-1 X 110MM, GRADE 8, CLASS II COATING

UPDATES

Raven software and documentation updates may be made available periodically on the Raven Applied Technology web site:

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

- RCM - Sprayer Installation Manual for AGCO RoGator C-Series (RG900, RG1100, RG1300)
- 016-7100-037 Rev. A
- 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.

CHAPTER

INSTALL THE RCM - SPRAYER

3

RCM - SPRAYER INSTALLATION

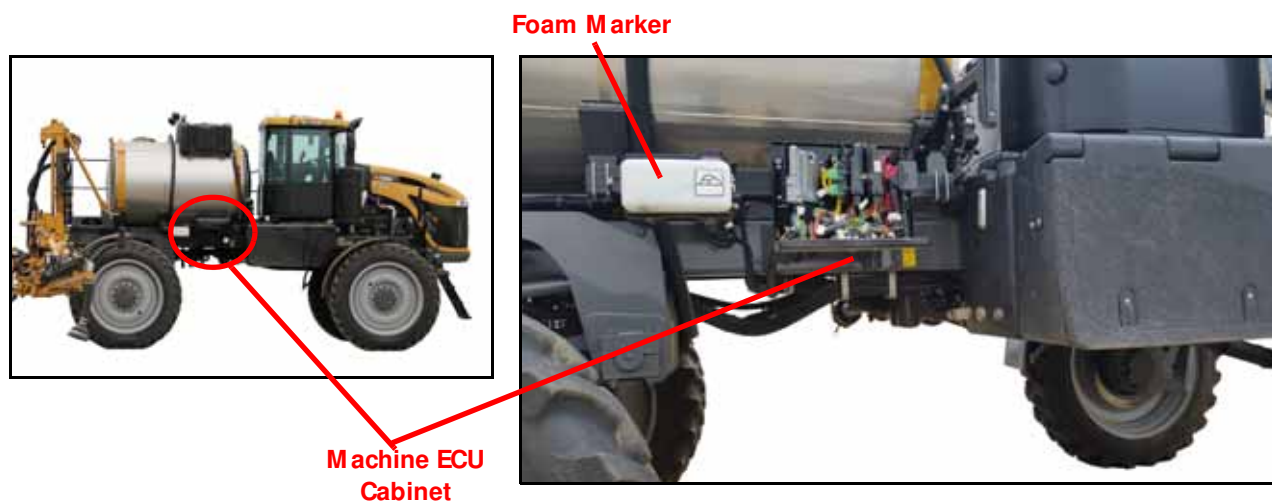
BEST PRACTICES AND RECOMMENDATIONS

- Do not connect battery leads until all cables are installed and connected.
- If a protected mounting location is not available on the equipment, mount the RCM - Sprayer with the connectors facing down toward the ground to prevent moisture from accumulating in the RCM - Sprayer connections.

RCM - SPRAYER MOUNTING LOCATION

1. Locate the foam marker pump (if applicable) and ECU cabinet between the axles on the right side of the machine.

FIGURE 1. RoGator 1300 ECU Cabinet and Foam Marker Pump Location



NOTE: If a foam marker is present on the machine, refer to the “RCM - Sprayer Mounting With Foam Marker” on page 14.

If Raven Autoboomb XRT is already installed on this machine, refer to “RCM - Sprayer Mounting with Raven Autoboomb XRT” on page 16.

2. Use the supplied u-bolts (P/N 107-0171-852) and 3/8” hardware to secure the RCM - Sprayer mounting plate (P/N 107-0235-015) to the outside of the frame structure, roughly 12” behind the ECU cabinet. Mount the plate so that the tabs at the bottom of the plate face toward the center of the machine.

3. Secure the RCM - Sprayer (P/N 063-0173-956) to the plate using the supplied bolts (M6 x75mm (qty 2), M6 x 65mm (qty 1), and flanged nylon lock nuts (qty 3)). It is recommended to mount the RCM - Sprayer to the inside of the mounting plate.

FIGURE 2. RCM - Sprayer Mounted



RCM - SPRAYER MOUNTING WITH FOAM MARKER

1. Remove the four bolts from the bottom of the foam marker mounting bracket and remove the foam marker.

FIGURE 3. Remove the Foam Marker



2. Remove the hardware holding the foam marker mounting bracket and slip the bracket off of the existing u-bolts.
3. Place the RCM - Sprayer mounting plate (P/N 107-0235-015) on the existing u-bolts with the tabs at the bottom of the bracket facing toward the center of the machine.
4. Replace the foam marker mounting bracket.
5. Replace the existing nuts to secure the plate and foam marker mounting bracket.

FIGURE 4. RCM - Sprayer Mounted



- Secure the RCM - Sprayer (P/N 063-0173-956) to the plate using the supplied bolts (M6 x75mm (qty 2), M6 x 65mm (qty 1), and flanged nylon lock nuts (qty 3)). It is recommended to mount the RCM - Sprayer to the inside of the mounting plate.

FIGURE 5. RCM - Sprayer Mounted



RCM - SPRAYER MOUNTING WITH RAVEN AUTOBOOM XRT

If the Raven Autoboom XRT system is installed on this machine, the Autoboom XRT ECU is mounted in this same location, so alternative RCM - Sprayer mounting steps are required:

- Remove the hardware securing the Autoboom XRT REM to the mounting plate.
- Place the RCM - Sprayer on the opposite side of the mounting plate from the REM, aligning with the mounting holes.

NOTE: Some drilling may be required depending on the revision of the mounting plate.

- Use the provided M6 x 110mm (qty 1) and M6 x 140mm (qty 2) bolts, along with M6 washers and M6 flanged nylon lock nuts to pass through both ECUs and fasten them to the mounting plate, one ECU on each side of the plate.

ECU CABINET PREPARATION

1. Locate the ECU Cabinet on the right side of the machine between the axles and remove the cover.

FIGURE 6. RoGator 1300 ECU Cabinet Location

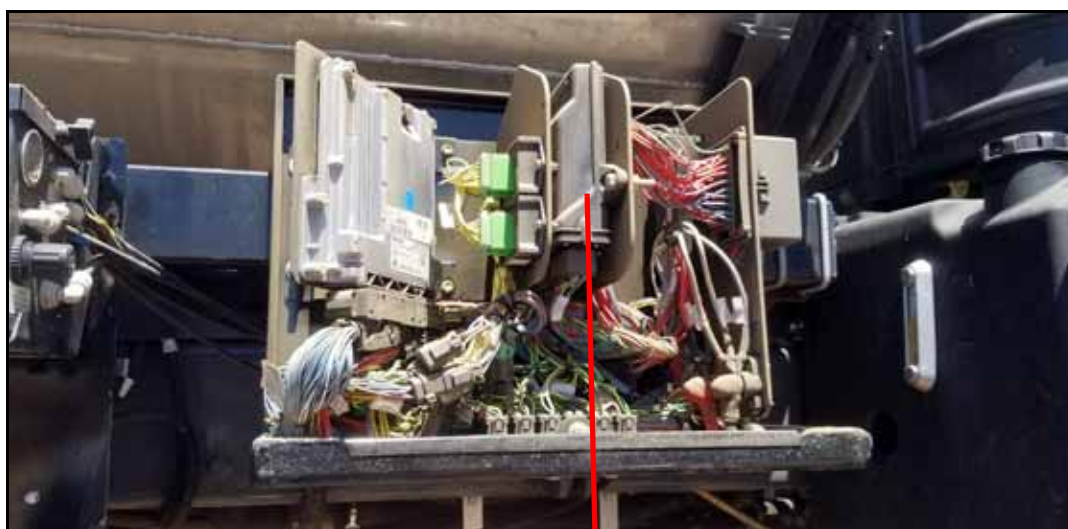


**Machine ECU
Cabinet**



2. Locate the Raven ISO Product Control ECU.
3. Use a socket and socket extension to loosen the bolt securing the ECU mounting plate to the rear cabinet wall and remove the plate from the ECU cabinet.

FIGURE 7. ECU Mounting Plate



Raven ISO Product Controller ECU

4. Remove the bolts securing the Product Controller ECU to the mounting plate.
5. Disconnect the electrical connectors from the ECU by loosening the 1/4" hex screw of each connector, and set the ECU aside. The RCM - Sprayer will replace this device.
6. Reinstall the ECU mounting plate into the rear of the ECU cabinet using the original hardware.
7. Locate the X0778 connectors (RVN PWR) and X0780 (RVN SIGNALS) as shown in Figure 8, "Power and Signal Connections," and disconnect the ISO Product Controller Node jumper cable connections. The jumper cable may be removed with the ISO Product Controller ECU.

FIGURE 8. Power and Signal Connections



8. For signals to reach the X0780 connector, complete step a through step e.
 - a. Locate the RCM - Sprayer bulkhead cable (P/N 115-2005-018) and connect the black 6-pin Deutsch plug into the mating connector labeled "Raven Node Power" in the ECU cabinet.
 - b. Connect the gray 12-pin Deutsch plug to the mating connector labeled "Raven Node Signals" in the ECU cabinet.
 - c. Remove the cap from the X0777 (RAVEN SIGNAL NODE).
 - d. Connect the X0775 (CNTRL SIGNAL) to X0777 (RAVEN NODE SIGNAL).
 - e. Place the cap on X0776 (EXT SIGNAL).

9. Remove the plug from one of the two locations circled in red in Figure 9, "Connecting RCM - Sprayer to ISOBUS (Drawing)," on the CANbus Hub in the base of the ECU cabinet.
10. Locate the connector X0150 labeled RVN CAN to RVN Node on the CANbus Hub and move it to the open connection where the plug was removed in the previous step. Replace the plug in this location. This will connect the RCM - Sprayer to the ISObus.

FIGURE 9. Connecting RCM - Sprayer to ISOBUS (Drawing)

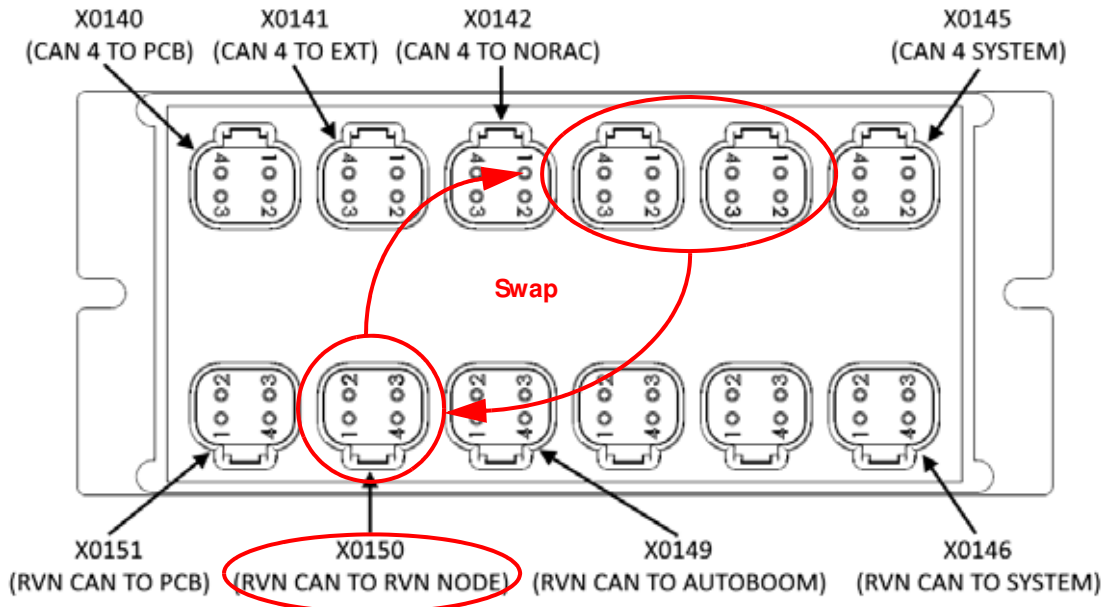
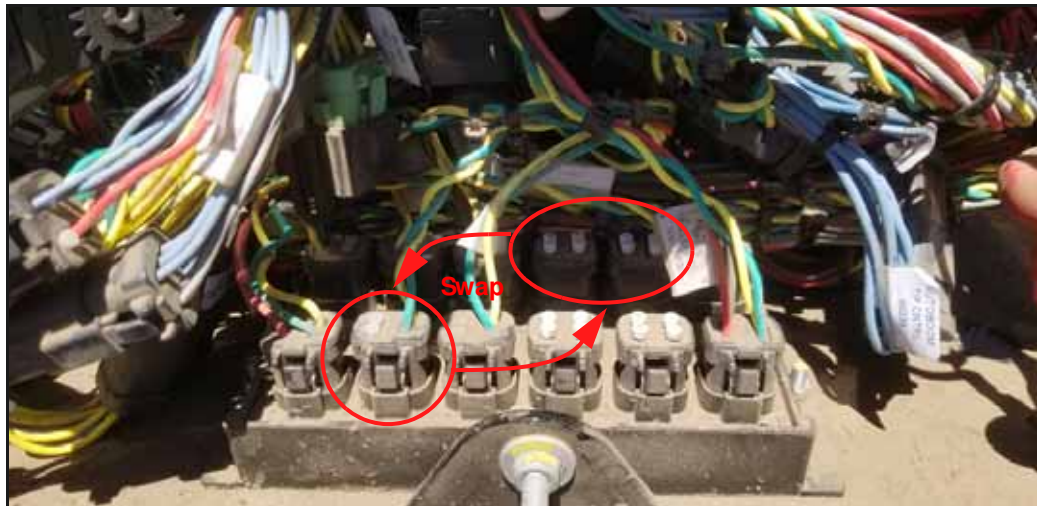
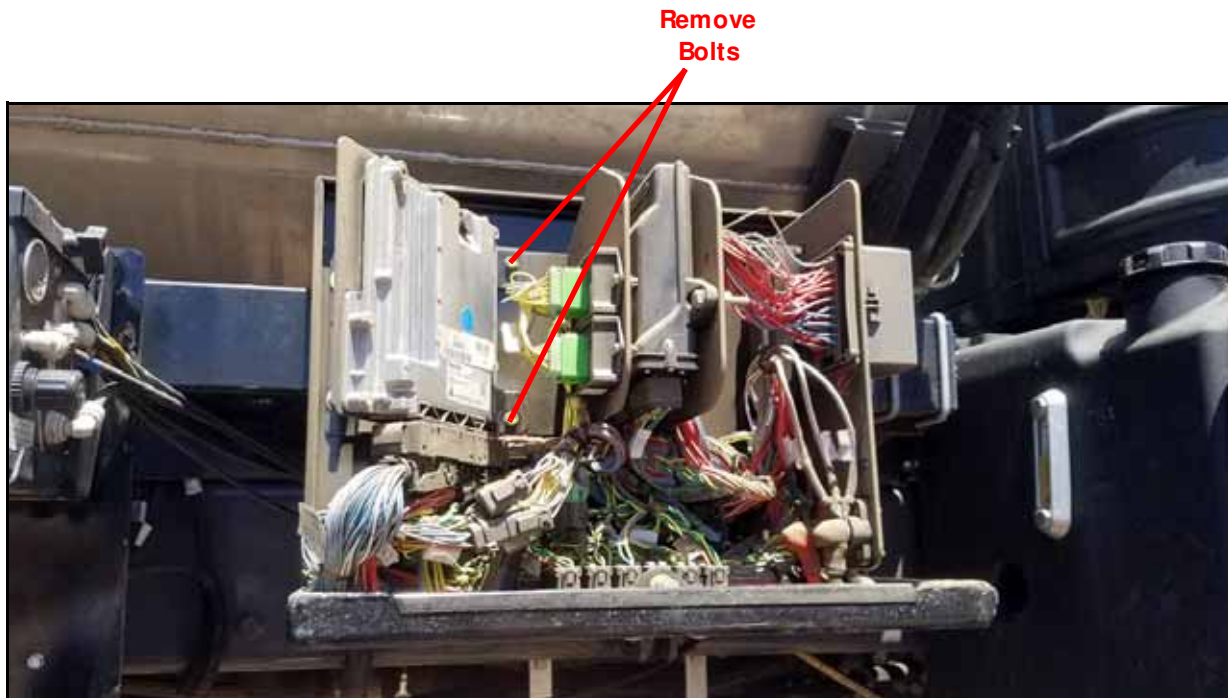


FIGURE 10. Connecting RCM - Sprayer to ISOBUS (Picture)



11. Remove the bolts securing the large ECU plate on the left side of the ECU cabinet as shown in Figure 11, "Access to the Rear of the ECU Cabinet," and move the ECU to allow access to the back wall of the ECU Cabinet.

FIGURE 11. Access to the Rear of the ECU Cabinet

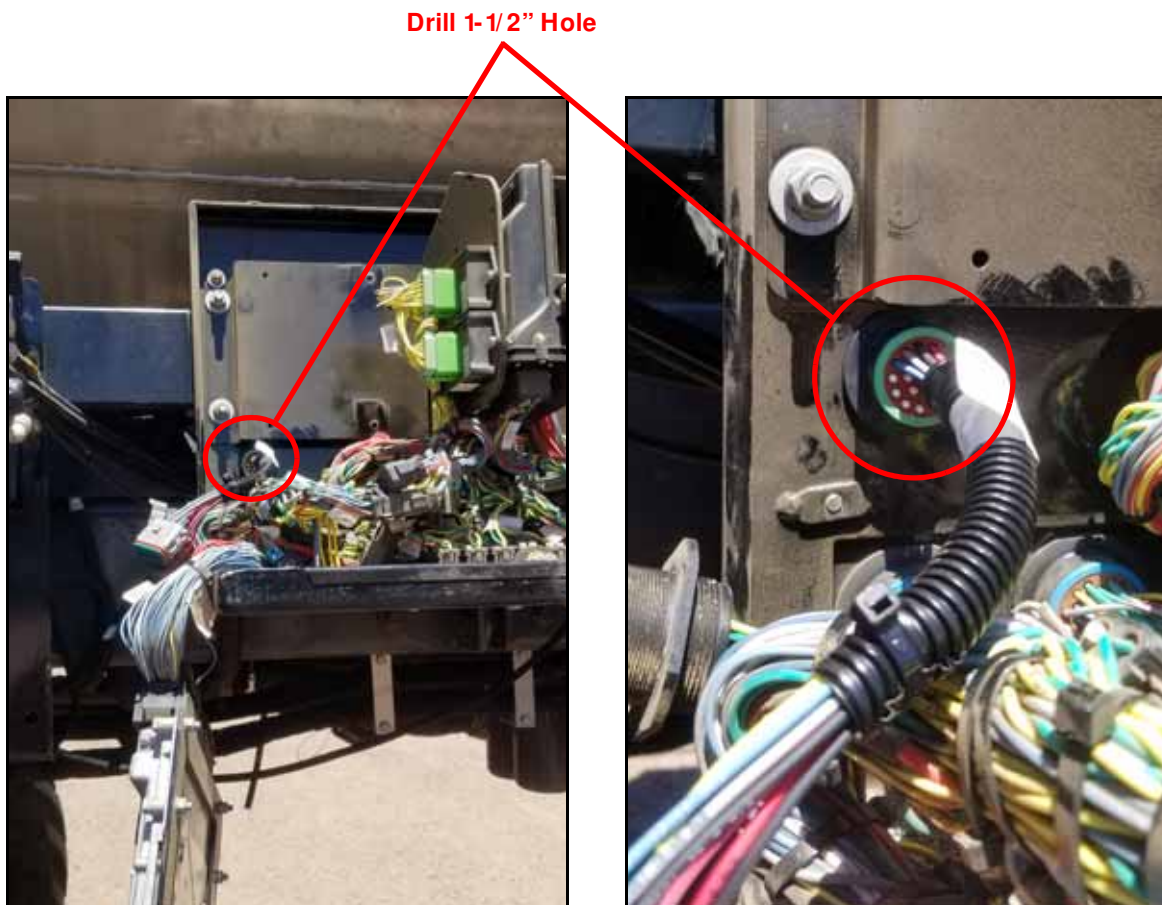


NOTE: Do not discard or modify the ECU or mounting plate.

12. Use a 1-1/2" hole saw to drill a hole through the back of the ECU cabinet for the bulkhead connection of the RCM - Sprayer bulkhead cable (P/N 115-2005-018) to pass through.

The recommended location for this port is toward the left edge of the box behind and below the ECU bracket just removed, about 1.0" below the bracket and 2.5" from the left edge of the ECU cabinet as shown in Figure 12 on page 21.

NOTE: Be careful not to damage any existing electrical components or wiring while drilling. This hole will be used later to connect the chassis cable to the electrical box cabling for final system connections.

FIGURE 12. ECU Cabinet Access for Hawkeye® 2

13. Remove the nut and washer from the round connector of the RCM - Sprayer bulkhead cable.
14. Pass the round connector through the 1-1/2" hole drilled in the rear of the cabinet wall.
15. Reinstall the washer and nut hand tight from behind the ECU cabinet.
16. Replace the AGCO ECU and bracket removed previously using the original hardware.

IN CAB CONNECTIONS

VIPER 4 ISOBUS CONNECTION

1. Connect the two 2-pin Deutsch ISOBUS connectors located behind the Viper® 4 together.

FIGURE 13. ISOBUS Connections

CHASSIS CABLE ROUTING AND CONNECTION

BEST PRACTICES AND RECOMMENDATIONS

- Do not connect battery leads until all cables are installed and connected.
- Route chassis cabling along existing cabling or plumbing to help avoid pinch points or stretching the cable during normal equipment operation.

ECU CABINET TO RCM - SPRAYER CONNECTIONS

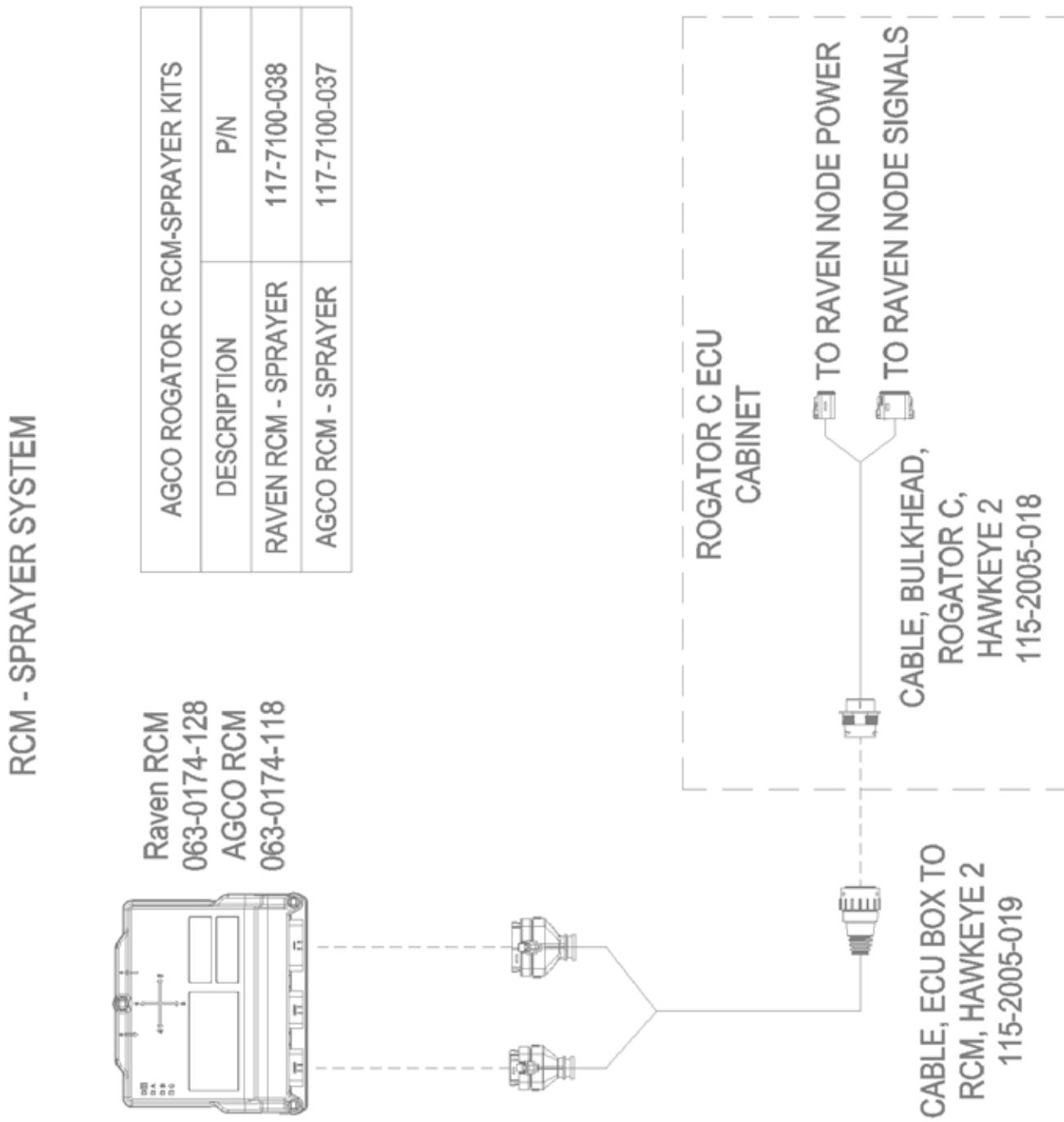
1. Locate the single, round connector on the RCM - Sprayer cable (P/N 115-2005-019) provided in the kit.
2. Route this connector to the outside back wall of the ECU Cabinet and connect to the bulkhead connector of the RCM - Sprayer bulkhead cable installed previously. Align the connector keyways and rotate the locking collar to secure.
3. Route the RCM - Sprayer cable (P/N 115-2005-019) back along the frame rail towards the RCM - Sprayer installed previously.
4. Connect the gray and black rectangular plugs to their mating connections of the RCM - Sprayer.
5. Secure the cable with the cable ties provided.

FIGURE 1. Chassis Cable ECU Cabinet Connection



SYSTEM DIAGRAM

FIGURE 2. System Diagram



CHAPTER

5

SIDEKICK PRO™ICD INSTALLATION

SIDEKICK PRO ICD CONNECTIONS TO CANBUS HUB

Connecting the Sidekick Pro™ICD pump to the RCM - Sprayer system is done via CANbus Hub located behind the node enclosure on the right-hand side of the machine.

For machines that do not already have injection pumps, Raven cables P/N 115-0172-443 and P/N 115-0172-444 are required. For systems that have Raven CAN Sidekick™ Pro pumps installed, simply follow the instructions below. For systems with AGCONTROL, Sidekick Pro™ICD pumps are installed and cables are connected.

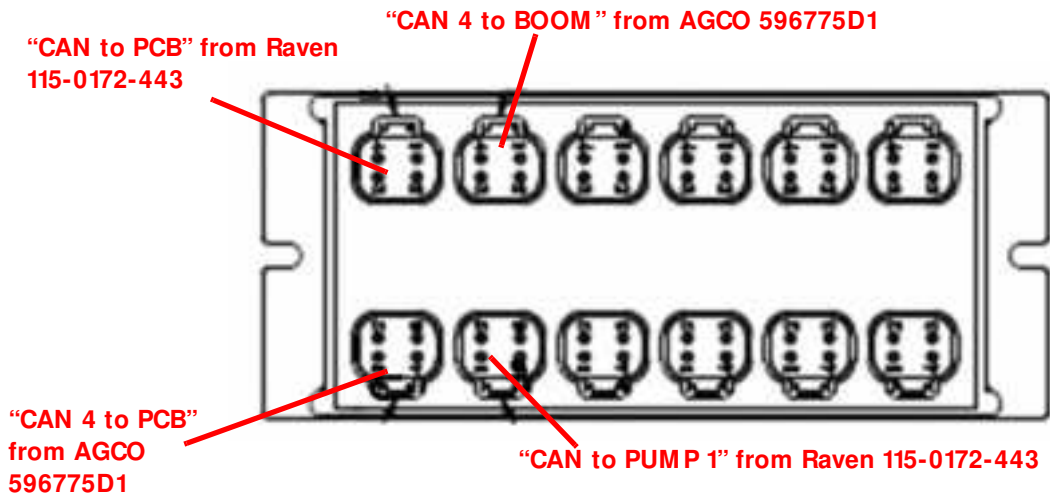
1. Locate the CANbus Hub located above the axle on right-hand side of the machine.

FIGURE 1. Rear CANbus Hub Location



2. Remove the cover plate.
3. On the CANbus Hub, connect the “CAN 4 to BOOM” connector on AGCO harness 596775D1 into the second receptacle in the top row. Refer to Figure 2 on page 26.

FIGURE 2. PCB Connections



- On the CANbus Hub, connect the "CAN 4 to PCB" connector from AGCO harness 596775D1 into the first receptacle in the bottom row. Refer to Figure 2 on page 26.
- Connect the "CAN to PUMP1" connector from the Raven harness (P/N 115-0172-443) into the second port in the bottom row.
- Unplug the terminator from the "CAN to PCB" connector on AGCO harness 596775D1. Set terminator aside for later use.
- Insert "CAN to PCB" from the Raven harness (P/N 115-0172-443) into the first port on the top row.
- Locate the connector labeled "INJECTION LOGIC" from the AGCO harness 596775D1. Connect the "INJECTION LOGIC" plug from 596775D1 to the "INJECTION LOGIC TO PUMP 1" receptacle on the Raven Harness (P/N 115-0172-443).
- Locate the 4-pin terminator that was removed from the "CAN to PCB" connector. Plug the "RVN CAN to PCB" from AGCO harness 596775D1 into the terminator.

SIDEKICK PRO ICD CABLE TO PUMP CONNECTIONS

- Route cable P/N 115-0172-443 along the frame rail and below the rear catwalk and up along the cables and hoses at the rear/center of the machine to the injection pumps.
- Use cable P/N 115-0172-444 to connect to the first injection pump.
- Connect the cable connections from Pump 1 to the P/N 115-0172-443 extension cable.
 - Connect the "INJECTION LOGIC" plug on the P/N 115-0172-443 extension to the 2-pin Deutsch connector on the P/N 115-0172-444 cable.
 - Connect "PUMP 1" from the P/N 115-0172-443 cable to the "CAN to PUMP" receptacle on the 115-0172-444 cable.
 - Connect "CAN to PCB" on the P/N 115-0172-443 cable to the "CAN to PUMP X or PCB" receptacle.
 - If a second pump is on the system, connect "CAN to PUMP X" to "CAN to PUMP" on the P/N 115-0172-444 cable for pump 2.
 - Remove the cap on the second 2-pin Deutsch connector and connect it to the P/N 115-0174-444 cable for pump 2.

APPENDIX

A

CABLE AND CONNECTOR MAINTENANCE

POWER AND ECU HARNESS MAINTENANCE

1. Disconnect the ECU harness connectors and inspect for signs of moisture or corrosion.
2. If moisture or corrosion is detected, use Deoxit D5, brushes, and compressed air to clean and dry the connector.
3. When clean, apply a coating of Corrosion X HD to the connector mating surfaces and contacts.

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.