RS1™ Installation Manual for Fendt 200 VFP Varioguide (with Fendt One, Model Year 2021)

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CHAPTER 1 IMPORTANT INFORMATION

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.

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 GPS antenna when leaving the machine unattended.

⚠ 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.

TOUCH SCREEN

- Only touch the touch-screen with your finger or by using a special touch-screen stylus/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

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.

CHAPTER 2 INTRODUCTION

Congratulations on your purchase of the Raven RS1™ system! This system is designed to provide cutting-edge, hands-free steering of the machine via Global Positioning System (GPS) coordinates.

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

Make. Fendt

Model. 200 VFP Gen 3 Varioguide Ready with Fendt One

FIGURE 1. Fendt Tractors

INSTALLATION BEST PRACTICES

⚠ WARNING

Carefully read and follow all safety requirements and precautions contained in this manual and the machine-specific Installation Manual. Failure to follow safety instructions may lead to equipment damage, personal injury, or death.

RECOMMENDATIONS

Before installing the RS1™ 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 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.

Raven Industries recommends the following best practices when installing or operating the RS1™ system for the first time, at the start of the season, or when moving the RS1™ system to another machine:

- Verify that the machine's hydraulic system is using fresh oil and that the filters have been recently changed
- Ensure 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.).

POINT OF REFERENCE

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

KIT COMPONENTS

This section contains a list of the components that are included in the RS1 kit. Before beginning the system installation, compare the items in the kit with the components on this list. If you have questions about the kit, contact your Raven dealer.

FIGURE 2. Fendt Varioguide w/ Fendt One CR7 and RS1 Kit Components (P/N 117-5033-272 Rev. A)

QTY	PART #	DESCRIPTION
1	053-0159-323	BOX, SHIPPING
1	115-4010-240	CABLE, RS1, FENDT 200 GEN3 (ONE)
1	115-4010-241	CABLE, V-BUS, FENDT 200 GEN3 (ONE)
1	117-5001-058	KIT, ROOF, RS1, STICK-ON
1	115-7300-171	CABLE, CR7, ISO, IN-CAB 9P AUXILIARY POWER
1	016-0171-649	SHEET, WARRANTY/HELP

FIGURE 3. Fendt Varioguide w/ Fendt One CR12 and RS1 Kit Components (P/N 117-5033-273 Rev. A)

QTY	PART #	DESCRIPTION
1	053-0159-323	BOX, SHIPPING
1	115-4010-240	CABLE, RS1, FENDT 200 GEN3 (ONE)
1	115-4010-241	CABLE, V-BUS, FENDT 200 GEN3 (ONE)
1	117-5001-058	KIT, ROOF, RS1, STICK-ON
1	115-7300-157	CABLE, CR12, ISO, IN-CAB 9P AUXILIARY POWER, EXTERNAL G
1	016-0171-649	SHEET, WARRANTY/HELP

UPDATES

Updates for Raven manuals as well as software updates for Raven consoles, and product controllers are available at the Applied Technology Division website:

https://portal.ravenprecision.com

Sign up for e-mail alerts to receive notifications when updates for your Raven products are available on the Raven website.

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

-RS1™ Installation Manual for Fendt 200 VFP Varioguide (with Fendt One, Model Year 2021)
-016-5033-272 Rev. A
-Any comments or feedback (include chapter or page numbers if applicable).
-Let us know how long you have 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 3 INSTALLATION

MOUNT THE HARNESS

1. Remove all 10 screws from the roof. There are 5 screws on each side.

FIGURE 1. Screw Locations

2. Locate the X3058 connector.

FIGURE 2. Location for X3058

3. Connect the CABLE, V-BUS, FENDT 200 GEN3 (P/N 115-4010-241) to X3058. Connect the other Deutsch connector to the AGCO Connect Module if installed in your tractor.
4. Locate the X4250 connector on the back of the roof.

FIGURE 3. Location X4250

5. Disassemble X4250 connector by pushing the yellow tabs out and down. Remove the connector from the hole and remove the yellow wedge on top.

6. Insert the pins from the CABLE, V-BUS, FENDT 200 GEN3 (P/N 115-4010-241) into slot 5 & 6 of the X4250 connector. Pin 5: Green Pin 6: Yellow. See the picture below and reinstall the X4250 connector.

FIGURE 4. X4250 Connector Location

7. Remove the plastic cover from the roof, and remove the plate under the cover.

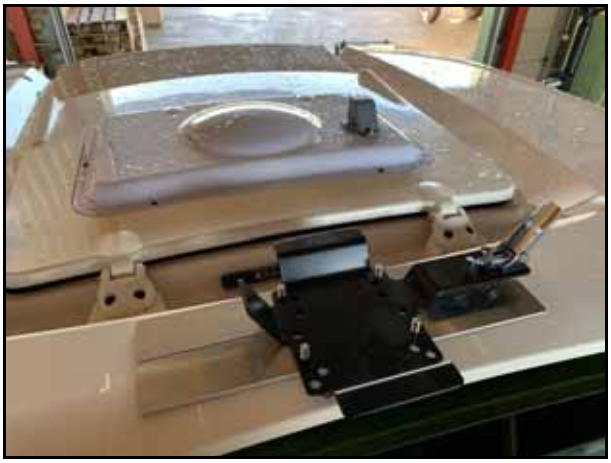
FIGURE 5. Roof Cover

8. Connect the CABLE, RS1, FENDT 200 GEN3 (ONE) (P/N 115-4010-240) to the X4250 connector and to the RS1 when it is installed. See the next chapter.

MOUNT THE RS1™

1. Mount the RS1 bottom assembly on the center line on the front section of the roof of the cab, using the two adhesive aluminum strips.

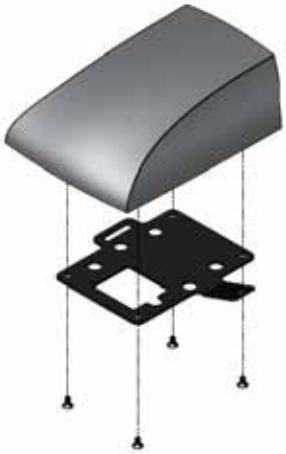
FIGURE 6. Bottom Assembly of RS1 Mount



NOTE: The mount stays permanently attached to the roof of the tractor.

2. Mount the latch plate onto the RS1 using the provided screws.

FIGURE 7. RS1 Mounted on Generic Bracket



NOTE: This latch plate stays connected to the RS1.

3. Secure the RS1, already connected to the latch plate, onto the fixed plate.
4. Secure the assembly with the latch.
5. Mount the round adhesive plate for the Laird antenna within 50 cm from the RS1 bracket.

FIGURE 8. Laird Antenna Adhesive Plate

6. Connect the connector.

NOTE: The LAIRD antenna is the main receiver of the RS1. Ensure all of the following for best functionality of RS1:

- The antennas are mounted at least 50 cm apart.
- The antennas are positioned to point to the backside of the tractor.
- The GPS antenna is mounted in front of the rear axle.

INSERT THE SIM CARD

When the RS1 is used with RTK accuracy or remote support, a working SIM card is needed. Before installing the SIM card, ensure the SIM pin code is switched off.

To install a SIM card:

1. Unscrew the four screws located on the bottom of the RS1.
2. Remove the SIM slot cover.
3. Insert the SIM card into the SIM slot.

FIGURE 9. SIM Card Inserted in SIM Slot

NOTE: The SIM card must be inserted into the J11 slot or the RS1 will not receive any GPS signal.

INSTALL CR7™ OR CR12™

Ensure the installer follows all of the following guidelines for best installation practices.

- Always ensure the terminal is placed in the most appropriate position facing the driver seat for easy access and use.
- Always use a RAM-C ball attachment.
- Mount the terminal with a solid bracket in a place free of vibrations.
- Secure all cables in the cabin so there are no free-hanging cables.
- Ensure the driver has a clear, unobstructed view all around the cabin.

FIGURE 10. CR7 Mounted in Various Positions

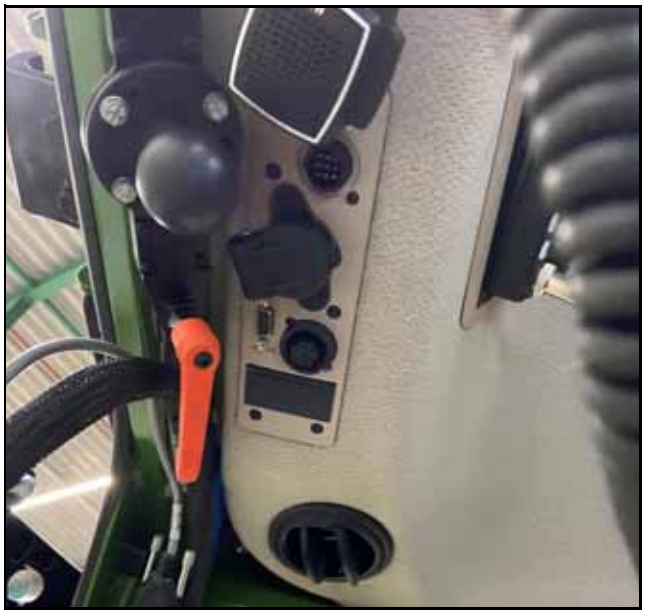
FIGURE 11. CR12 Mounted in Various Positions

INSTALL FIELD COMPUTER HARNESS

Ensure the installer follows all of the following guidelines for best installation practices.

- Install the field computer harness between the field computer and the standard connectors of the tractor.
- Mount the 9-pin ISOBUS connector to the panel mount connector in the cabin of the tractor.
- Mount the 3-pin power connector.
- Guide the harness to the field computer.

FIGURE 12. ISOBUS and Power Connector



ACTIVATE AUTOMATIC STEERING

NOTE: Before activating automatic steering, ensure that the tractor is unlocked for third-party steering systems. Contact a Fendt dealer to unlock this feature.

TABLE 1. Fendt Activation for Third-Party Guidance System

Part Number	Description	Compatible Machines
ACP0595080	Third-party guidance system activation.	Fendt Varioguide 200 Gen 3, 300 Gen 4, and 700 Gen 6

To activate automatic steering for Fendt Varioguide systems with RS1:

1. Press the pre-activation steering button.

FIGURE 13. Pre-Activation on Armrest

2. After a successful self-test of the steering system, the LED will activate and automatic steering can be activated by pressing the autosteering button on the joystick.

SYSTEM DRAWINGS

FIGURE 14. Fendt Varioguide w/ Fendt One CR7 & RS1 System Drawing (P/N 054-5033-272 Rev. A)

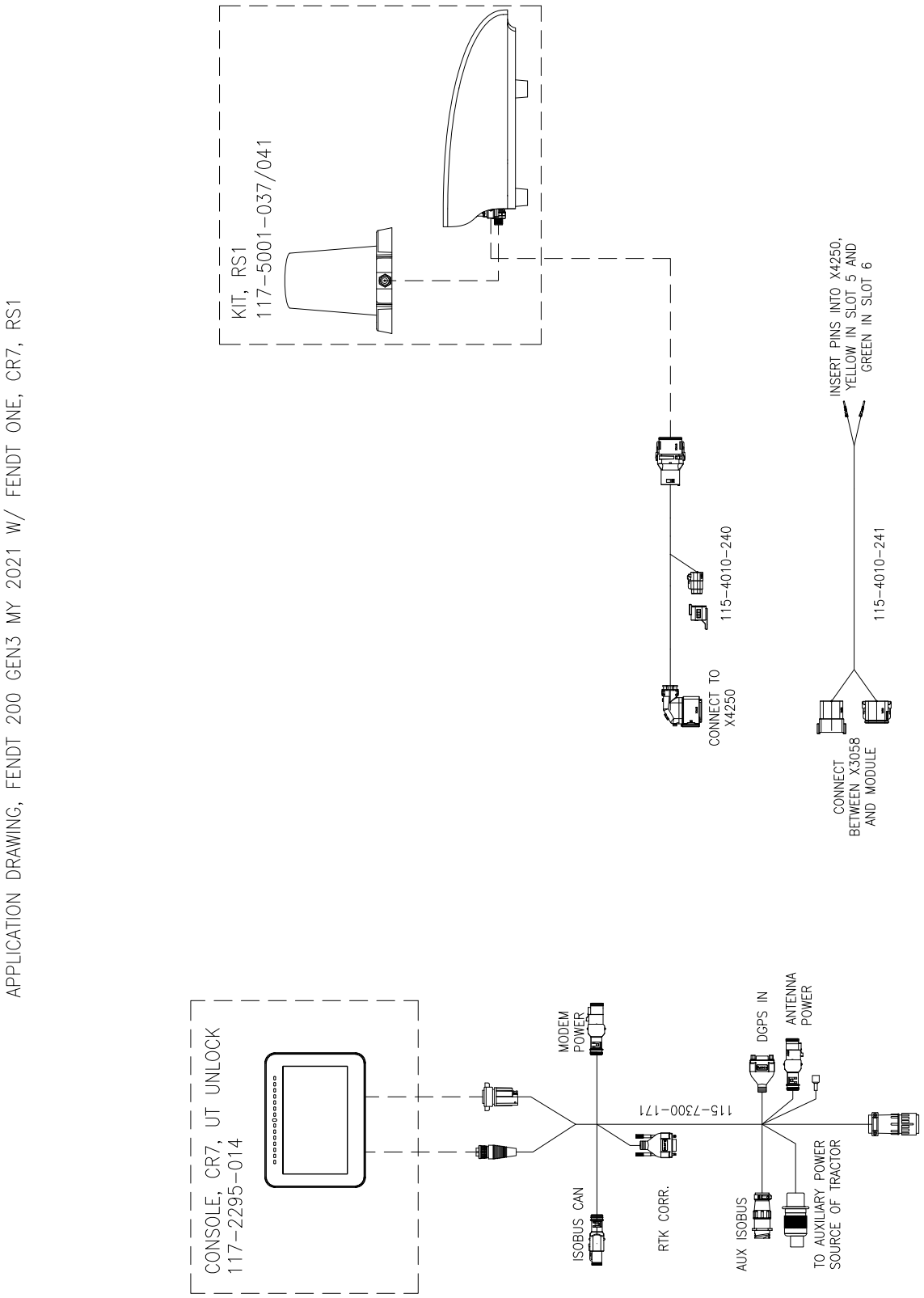
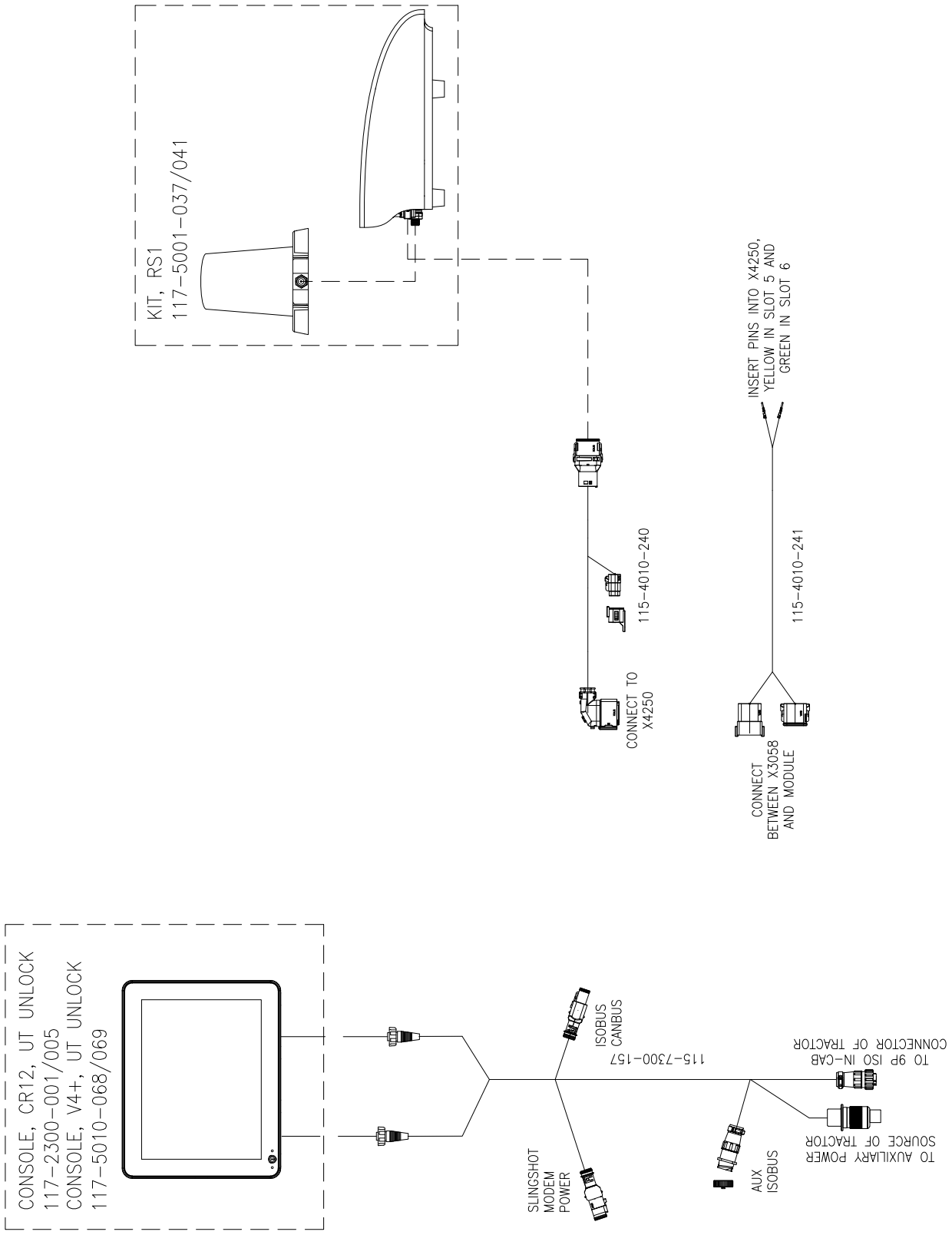



FIGURE 15. Fendt Varioguide w/ Fendt One CR12 & RS1 System Drawing (P/N 054-5033-273 Rev. A)