

**Case IH Trident 5550 -
Non-Steer Ready, Raven
RS1™ HDU Guidance and
Steering Installation
Manual**

P/N 016-5032-121 Rev. A

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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 RS1™ HDU 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 RS1 HDU 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 RS1 HDU, observe the following safety measures:

- Be alert and aware of surroundings.
- Do not operate RS1 HDU or any agricultural equipment while under the influence of alcohol or an illegal substance.
- Remain in the operator's position or a safe working distance away from the booms at all times when RS1 HDU is engaged.
- Disable RS1 HDU when exiting from the operator's seat and machine.
- Do not drive the machine with RS1 HDU enabled on any public road.
- Determine and remain a safe working distance from other individuals. The operator is responsible for disabling RS1 HDU when the safe working distance has diminished.
- Ensure RS1 HDU is disabled prior to starting any maintenance work on RS1 HDU or the machine.

WARNING

- When starting the machine for the first time after installing RS1 HDU, be sure that all persons stand clear in case a hose has not been properly tightened.
- The machine must remain stationary and switched off, with the booms unfolded and supported, during installation or maintenance.

CAUTION

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 RS1 HDU 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.

Congratulations on your purchase of the RS1™ HDU system!

The following instructions are designed to assist with the proper installation of the RS1 HDU system. Refer to the RS1 Calibration & Operation Manual (P/N 016-4010-001) for assistance with calibrating the software and using the RS1 HDU system.

PREPARING FOR INSTALLATION

Before installing the RS1 HDU system, park the machine where the ground is level, clean, and dry. Turn off the machine and leave it turned off for the duration of the installation process.

During the installation process, follow good safety practices. Be sure to carefully read the instructions in this manual as you complete the installation process.

RECOMMENDATIONS

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

- Install the RS1 unit in the recommended location.
- 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.

POINT OF REFERENCE

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

KIT CONTENTS

This section contains a list of the components that are included in the RS1 HDU 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.

TABLE 1. RS1 HDU Installation Kit (P/N 117-5032-121)

Item Description	Part Number	Qty.
Sheet - Help/Warranty	016-0171-649	1
ECU - Hydraulic Drive Unit (HDU)	063-0173-887	1
Switch - Mater	063-0173-961	1
Bracket - RS1 Mounting	107-0172-498	1
Bracket - HDU Mounting	107-0172-543	1
Cable, RS1 Patriot 3XXX/Trident Roof	115-4010-081	1
Cable - HDU Harness	115-4010-038	1
Cable - HDU CIH Patriot MY17 NSR	115-4010-056	1
Cable - HDU B to Bulkhead	115-4010-057	1
Cable - Sauer Valve to Bulkhead, Trident	115-4010-079	1
Cable - HDU Cab Switches My 2017 Patriot	115-4010-059	1
Cable - Power Adapter, 3P DTM to 6P DT	115-0172-467	1

TABLE 1. RS1 HDU Installation Kit (P/N 117-5032-121)

Item Description	Part Number	Qty.
Bracket - RS1 Latch, CIH	115-0159-803	1
Bracket - Mounting, Raven Steering Valve, Case IH Trident	107-0172-534	1
Kit - Hydraulic, Raven Steering Valve, Case IH Trident	117-0199-156	1
Manifold - Hydraulic Override with Fittings, Press. Transmission	334-0003-085	1
Screw - Socket, Head Cap, 1-4" - 20 x 2" Long	311-0050-109	2
Bolt - 5/16" - 18 x 7/8", Hex Head	311-0052-104	4
Nut - Hex, 1 - 4" - 20	312-1001-074	2
Washer - Lock, 1/4" Split Zinc	313-1000-016	2
Washer - 5/16" Lock, Split, Zinc	313-1000-019	4
Washer - Flat, 1/4"	313-2300-009	2
Screw - Machine, 1/4" - 20 x 1/2" Flat Head	311-0003-041	4
Screw - 1/4"-20 x 1/2" Flat Head	311-0003-041	4
Nut - 1/4"-20 Nylon Insert Lock	312-1001-168	2

TABLE 1. RS1 HDU Installation Kit (P/N 117-5032-121)

Item Description	Part Number	Qty.
Nut - M6 Lock	312-4000-216	4
Clamp - 0.625" Insulated Cable	435-3001-049	5

TABLE 2. WAS Installation Kit (P/N 117-0192-052)

Item Description	Part Number	Qty.
Bracket, WAS Trident 5550	107-0172-592	1
Sensor - 300 mm Non-Contact Linear	416-0001-052	1
Bracket - WAS Rod	107-0172-030	1
Mount - M10 Universal Ball	103-0001-029	2
Spacer - 0.406" ID x 0.750" OD x 0.75" Long Steel	107-0172-037	3
Clamp - U-Bolt 1.75" x 5/16" - 18	435-3003-052	1
Bolt - Hex Head 3/8" - 16 x 1.75" UNC - 2A	311-0054-058	1
Bolt - Hex Head 3/8" - 16 x 3.5", Steel	311-0054-065	1
Spacer - Steel, 0.406" ID x .75" OD x .375" Long	107-0172-103	2
Nut - M10 x 1.5 Pitch x 5 mm Thick	312-1002-035	2

TABLE 2. WAS Installation Kit (P/N 117-0192-052)

Item Description	Part Number	Qty.
Nut - 5/16"-18 Nylon Insert Lock	312-4000-059	2
Nut - 3/8"-16 Nylon Insert Lock	312-4000-061	2
Washer - 5/16 Flat	313-2301-005	4

TABLE 3. RS1 Unit Kit

Item Description	Part Number	Qty.
Manual - RS1 Operation	016-4010-001	1
RS1	063-0173-820, 063-0173-921, or 063-0173-922	1

UPDATES

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

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

-Case IH Trident 5550 - Non-Steer Ready, Raven RS1™ HDU Guidance and Steering Installation Manual

-P/N 016-5032-121 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

3

WHEEL ANGLE SENSOR INSTALLATION

ASSEMBLE THE WHEEL ANGLE SENSOR (WAS)

FIGURE 1. WAS

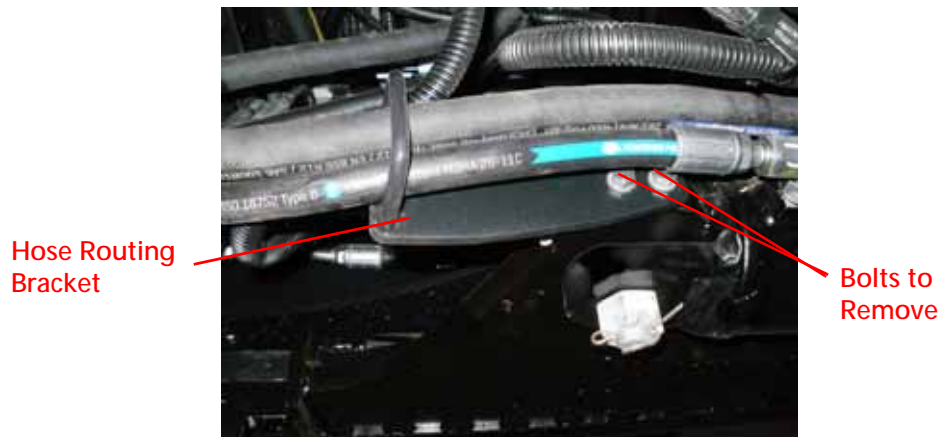


1. Install the M10 universal ball mounts (P/N 103-0001-029) and M10 jam nuts (P/N 312-1002-035) on both ends of the linear WAS (P/N 416-0001-052).
2. Leave the nuts and ball mounts loose until the sensor is installed later in the procedure.

INSTALL THE WAS

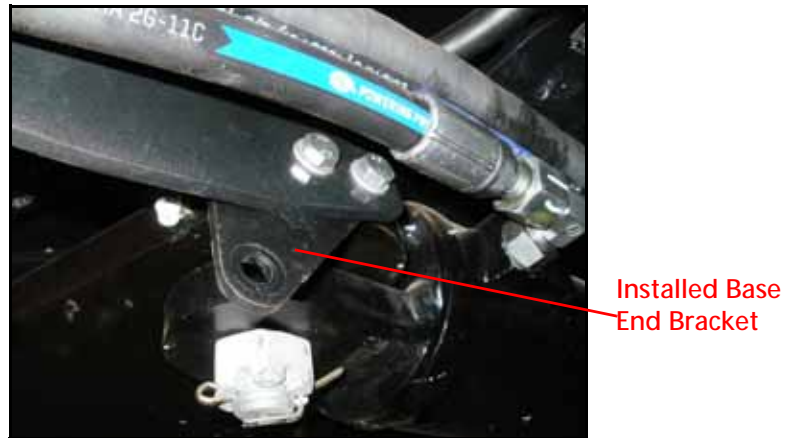
1. Park the machine on a level surface with the wheels pointing straight ahead.

FIGURE 2. Hose Routing Bracket



2. Locate the bracket on the right side steering cylinder used to route the machine's hydraulic hoses.
3. Remove two bolts securing the bracket, and mount the WAS base end mounting bracket (P/N 107-0172-592) in between the machine's frame, and the hydraulic hose routing bracket.

FIGURE 3. Secured Base End Bracket



NOTE: The hole for mounting the WAS base end should be towards the inside of the machine.

- Using the provided 3/8" bolt (P/N 311-0054-058), 3/8" lock nut (P/N 312-4000-061), and steel spacer (P/N 170-0172-103), install the base end of the WAS.

FIGURE 4. Installed WAS Base End



- On the rod end of the steering cylinder, install the provided 1.75" U-bolt (P/N 135-3003-052), so that the ends of the U-bolt are positioned at a 45° angle towards the ground. Do not fully tighten the U-bolt hardware at this time.

FIGURE 5. Installed U-Bolt



6. Install the 3/8" - 16 x 3/5" (P/N 311-0054-065) bolt in the WAS rod end mounting bracket (P/N 107-0172-030).
7. Mount the WAS rod end to the bolt, using two of the provided steel spacers (P/N 107-0172-037), and the 3/8" lock nut (P/N 312-4000-061).
8. Secure the bracket using the provided 5/16" lock nuts (P/N 312-4000-059).
9. With the wheels pointed straight ahead, ensure that half of the WAS stroke is extended.
10. Secure all mounting hardware.
11. Slowly turn the machine's wheels to the left and right locks to ensure the sensor does not bind, is not over extended, or over compressed.



⚠ WARNING

Hydraulics are under pressure. Care should always be taken with a system that has been pressurized.

Before beginning the hydraulic installation, turn off the machine and relieve pressure by turning the steering wheel left and right.

When disconnecting or purging hydraulic hoses, be aware that the hydraulic fluid within the machine's system may be extremely hot and under high pressure.

Tampering with hydraulic valves may cause serious injury or death, and will void the warranty.



⚠ CAUTION

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

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



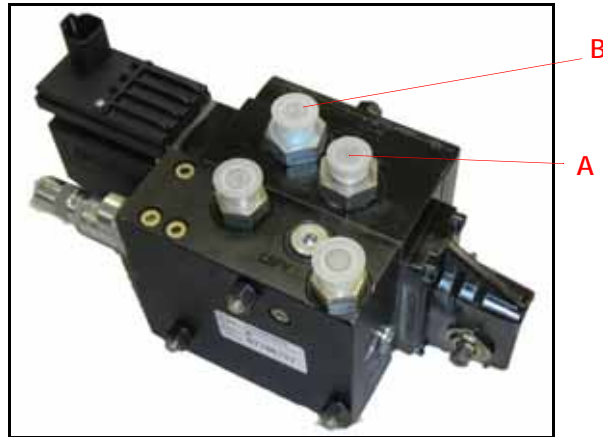
NOTICE

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

INSTALL FITTINGS ON THE RAVEN STEERING VALVE

Before mounting the Raven steering valve (P/N 334-0003-088) 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.

FIGURE 1. Fittings Installed on the Raven Steering Valve



Fitting	Part Number	Port
Fitting - -6 SAE O-Ring Plug	333-0012-104	LSPV, LS STEER
Fitting - -4 SAE O-Ring Plug	333-0012-051	PS
Fitting - -6 ORFS (M) to -8 SAE O-Ring (M) Straight Adapter	333-0012-199	P, T
Fitting - -6 ORFS (M) to -10 SAE O-Ring (M) Straight Adapter	333-0012-233	A, B
Fitting, Elbow, 90° Swivel, -8 ORFS M/F	333-0012-067	As Needed
Fitting, Elbow, 90° Swivel, -6 ORFS M/F	333-0012-065	P

INSTALL FITTINGS ON THE FLOW SWITCH

FIGURE 2. Fittings Installed on the Flow Switch



1. Install a -6 ORFS (M) to -6 SAE O-ring (M) straight adapter fitting (P/N 333-0012-084) in Ports A3 and B3 of the flow switch (P/N 334-003-085).
2. Install the pressure transducers in Ports A2 and B2 of the flow switch.

MOUNT THE RAVEN STEERING VALVE

FIGURE 3. Mounting Location



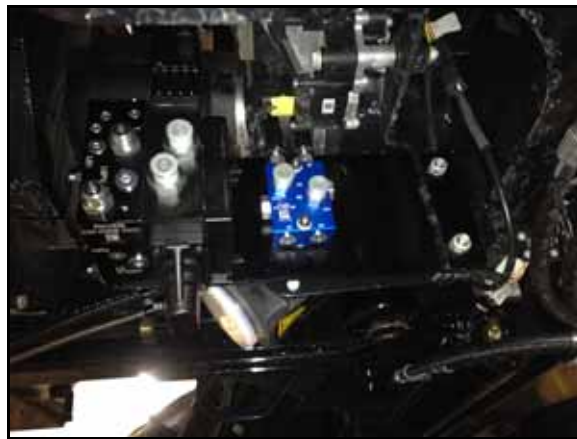
1. Remove the bolts used to secure the machine's radar bracket (beneath the cab).

FIGURE 4. Raven Steering Valve Installed on Mounting Plate



2. Mount the Raven steering valve (P/N 334-0003-088) to the hydraulic valve mounting bracket (P/N 107-0172-534) using four 5/16" hex bolts (P/N 311-0052-104) and four 5/16" lock washers (P/N 313-1000-019).
3. Mount the flow switch (P/N 334-0003-085) to the valve mounting bracket using two 1/4"-20 x 2" screws (P/N 311-0050-109), two 1/4" flat washers (P/N 313-2300-009), two 1/4" split lock washers (P/N 313-1000-016), and two 1/4"-20 hex nuts (P/N 312-1001-074).

FIGURE 5. Raven Steering Valve Mounted on the Machine



4. Mount the hydraulic valve mounting bracket to the machine's radar bracket using the bolts removed in step 1.

NOTE: If needed, the bolts attaching the radar to the bracket may be removed and flipped to make room for the valve bracket.

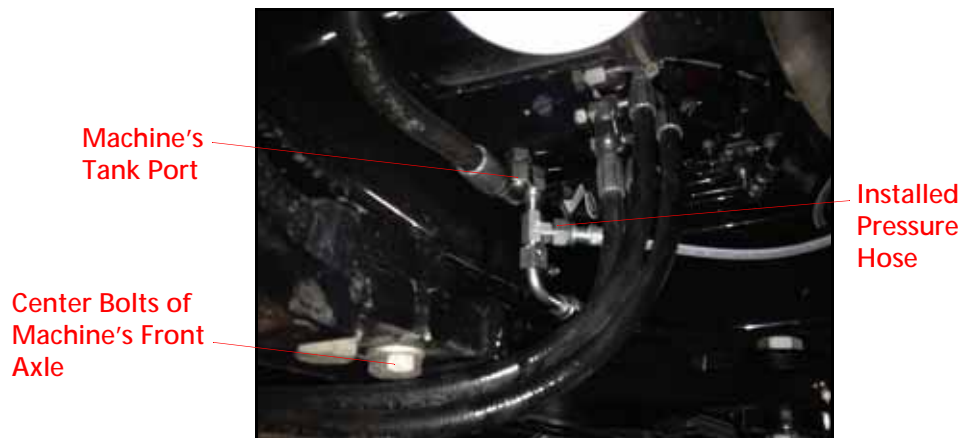
INSTALL THE PRESSURE HOSE

1. Locate the machine's steel pressure line.

NOTE: The pressure line runs on the inside of the frame from the rear of the machine. The line bends 45° just before the hydraulic hose connection. Trace it to the P port on the steering orbital if necessary.

2. Disconnect the machine's pressure hose from the steel pressure line.

FIGURE 6. Pressure Hose Installed



3. Install a -8 ORFS M/M/F swivel run tee adapter fitting (P/N 333-0012-028) on the block above the rear of the front axle.
4. Connect the machine's pressure hose to the opposite end of the installed tee fitting.
5. Install the supplied hydraulic hose (P/N 214-1000-630) on the 90° end of the installed tee fitting.
6. Connect the straight end of the installed hydraulic hose to the 90° fitting (333-0012-065) on Port P of the Raven steering valve.

INSTALL THE TANK HOSE

1. Locate the machine's tank line.

NOTE: The pressure and tank line connect to a block above the front axle on the rear side.

2. Disconnect the machine's tank hose from the block.

FIGURE 7. Tank Hose Installed



3. Install a -8 ORFS M/M/F swivel run tee adapter fitting (P/N 333-0012-028) on the machine's hydraulic block.
4. Connect the machine's tank hose to the opposite end of the installed tee fitting.
5. Install the -8 end of the supplied hydraulic hose (P/N 214-1000-630) on the 90° end of the installed tee fitting.
6. Connect the other end of the installed hydraulic hose to Port T of the Raven steering valve.

INSTALL THE LEFT AND RIGHT STEERING HOSES

1. Locate and disconnect the machine's left steering hose from the left steering cylinder and from the machine's steel hydraulic line.

NOTE: The left steering hose is connected to the fitting located closest to the center of the machine.

The machine's left hydraulic hose will not be used in the installation.

2. Connect the supplied hydraulic hose (P/N 214-1001-171) to the steel line that was previously connected to the machine's left hydraulic hose.
3. Route and connect the other end of the 214-1001-171 hose to the Port A3 of the installed flow switch (P/N 334-0003-214).

FIGURE 8. Steering Hose Installation Locations



4. Install a -8 ORFS M/M/F swivel run tee adapter fitting onto the open port on the machine's left cylinder.
5. Connect the straight end of the 214-1001-172 hose to the straight end of the installed tee fitting.
6. Install the 90° end of the 214-1001-172 hose to Port B3 of the flow switch.
7. Connect the 90° end of the 214-1001-174 hose to the 90° degree end of the tee fitting installed on the machine's left cylinder.
8. Connect the straight end of the 174 hose to Port A on the 334-0003-088 steering valve.

FIGURE 9. Installed Right Steering Hose



9. Locate and disconnect the machine's right steering hose from the right steering cylinder.

10. Install a -8 ORFS M/M/F swivel run tee adapter fitting (P/N 333-0012-028) in the open steering cylinder port.
11. Connect the machine's right steering hose to the opposite end of the installed tee fitting.
12. Install the 90° end of the supplied hydraulic hose (P/N 214-1000-173) on the 90° end of the installed tee fitting.
13. Connect the straight end of the installed hydraulic hose to Port B of the Raven steering valve (P/N 334-0003-088).

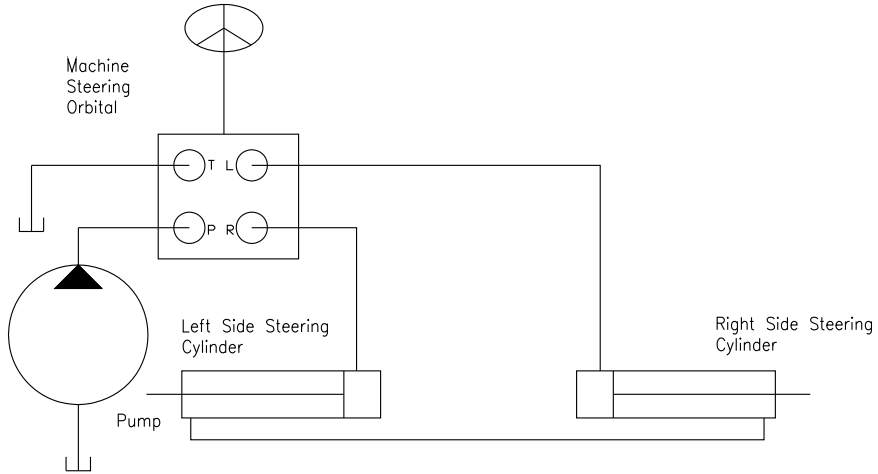
FIGURE 10. Raven Steering Hose Installed



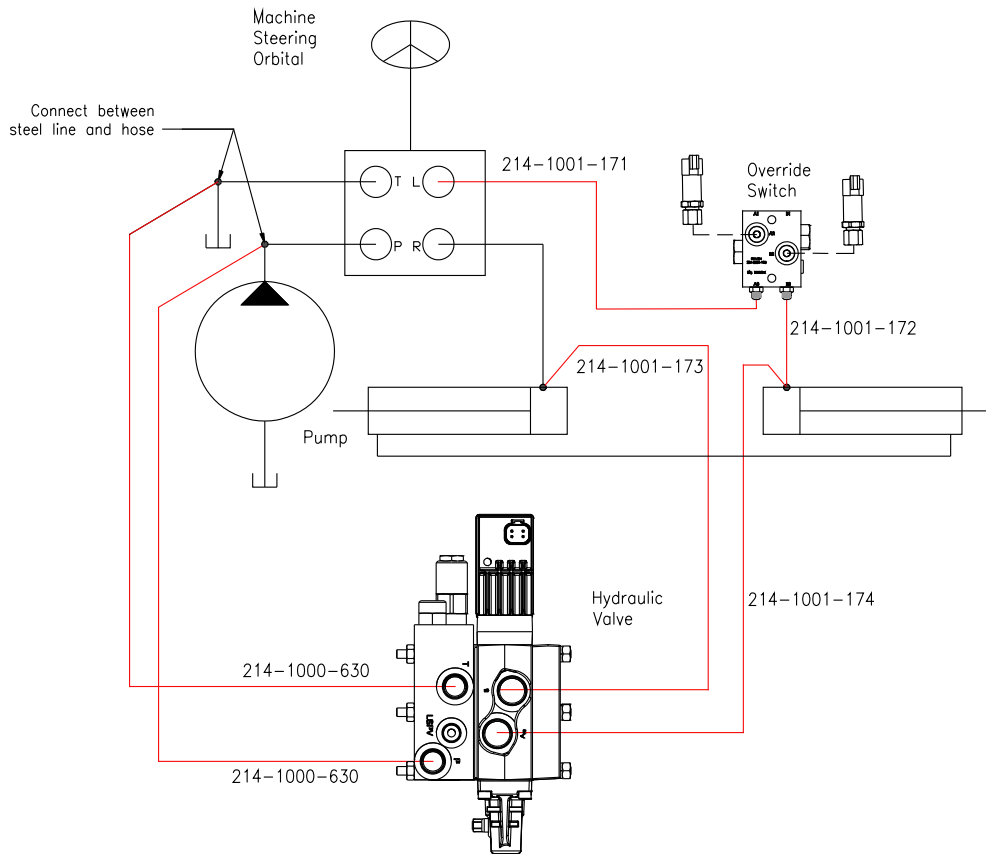
Right
Steering
Hose

HYDRAULIC SYSTEM DIAGRAM

Before Installation



After Installation



CHAPTER

5

CAB COMPONENT INSTALLATION

INSTALL THE RS1 UNIT

FIGURE 1. Mounting Bracket Installed



1. Install the RS1 mounting bracket (P/N 107-0172-498) on the bottom of the RS1 unit using four 1/4"-20 x 1/2" flat head machine screws (P/N 311-0003-041).

FIGURE 2. Machine's Existing Receiver Mounting Bracket



2. Install the receiver mounting bracket (P/N 116-0159-803) on the front of the cab's roof using the machine's existing hardware.

FIGURE 3. RS1 Unit Installed on Cab Roof



3. Insert the tab of the RS1 latch mounting bracket into the slotted tab of the receiver mounting bracket to interlock the brackets.
4. Secure the RS1 mounting bracket to the latch mounting bracket by securing the latch.

NOTE: It may be necessary to adjust the latch in order to secure the RS1 unit.

INSTALL THE HYDRAULIC DRIVE UNIT (HDU)

INSTALL THE HDU HARNESS

FIGURE 4. Access Panel to be Removed



1. Locate and remove the wall panel behind the operator's seat.
2. Located the unused bulkhead connection on the rear of the cab, and remove the covering.

FIGURE 5. Unused Bulkhead Connection



3. Install the bulkhead connector on the 115-4010-057 harness into the open bulkhead on the machine.
4. Connect the CAN connector of the HDU harness (P/N 115-4010-056) to the machine's X-211 PRODUCT CAN connector located under where the bulkhead connector that was installed, on the floor of the rear compartment.

NOTE: The connector will have a dust cap over it.

FIGURE 6. HDU Harness Cable Installed on HDU



5. Install the two rectangular connectors of the HDU harness into the mating ports of the HDU (P/N 063-0173-887).
6. Install the power adapter cable (P/N 115-0172-467) onto the mating 6-pin connector on the HDU harness (P/N 115-4010-056).
7. Connect the other end of the power adapter cable to the machine's connector labeled "X-024M GPS POWER PORT"

FIGURE 7. GPS Power Port Connector



INSTALL THE HDU SWITCH HARNESS CABLE

FIGURE 8. HDU Harness Cable Connection



1. Connect the 8-pin CAB SWITCHES connector of the HDU harness cable (P/N 115-4010-059) to the mating female 8-pin connector of the HDU switch harness cable (P/N 115-4010-056).

FIGURE 9. Seat Switch Harness Connections



2. Locate and disconnect the machine's seat switch harness connections.
3. Connect the SEAT SWITCH harness connections of the HDU switch harness cable between the machine's seat switch connections.
4. Plug the ENABLE connector on the HDU switch harness cable to the machine's mating "X-708" "REMOTE ENGAGE SWITCH" located in the rear of the cab.

FIGURE 10. Master Switch Installation Location



5. Locate an unused switch port of the machine's control console.
6. Use a flat-head screwdriver to gently remove the cover of the unused switch port.
7. Route the MASTER connector on the HDU switch harness cable to the unused port.
8. Pull the MASTER connector through the switch port opening.

FIGURE 11. Master Switch Installed



9. Install the master switch (P/N 063-0173-961) on the MASTER connector of the HDU switch harness cable (P/N 115-4010-059).
10. Feed the harness and switch wires back into the console casing.
11. Press on the switch casing to ensure the switch is securely installed.

INSTALL THE VALVE HARNESS CABLE

NOTE: Hydraulic hose connection location may differ from the images in this manual.



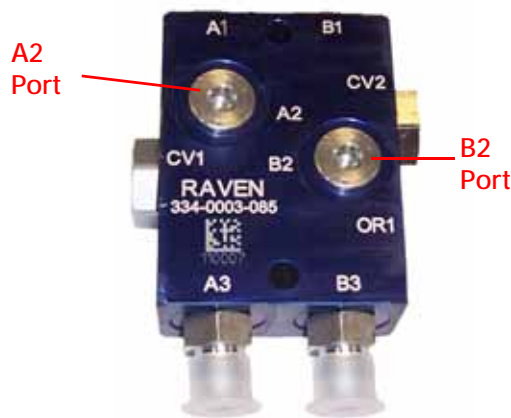
1. Connect the 2-pin connector of the 115-4010-056 harness to the mating 2-pin connector of the HDU Valve harness (P/N 115-4010-057).
2. From beneath the cab, connect the round, 31-pin connector of the valve harness (P/N 115-4010-079) to the mating 31-pin connector of the bulkhead harness cable (P/N 115-4010-057).

FIGURE 12. VALVE Harness Cable Installation Location



3. Connect the 4-pin VALVE connector to mating connector on the RS1 hydraulic valve (P/N 334-0003-088).

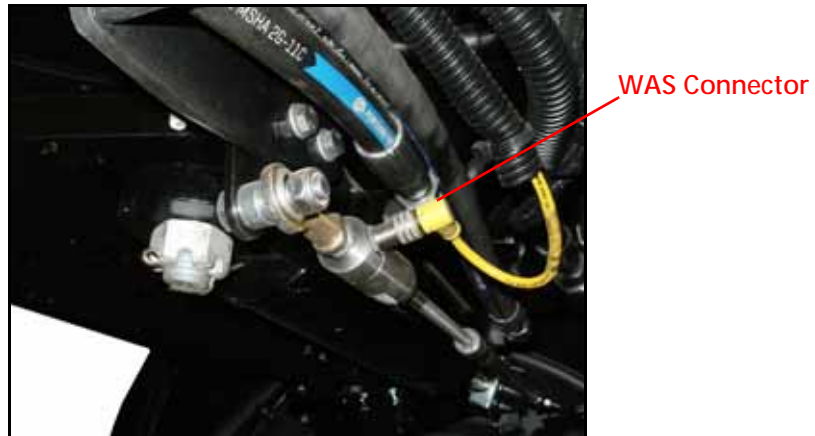
FIGURE 13. PS1 and PS2 Connections



4. Install the PSI 1 and PSI 2 connectors on the pressure transducers installed in Ports A1 and B1 of the flow switch (P/N 334-0003-085).

NOTE: The connectors can be installed in either port of the flow switch.

FIGURE 14. WAS Connection



5. Connect the WAS connector to the base-end of the installed WAS (P/N 416-0001-052).

MOUNT THE HDU

FIGURE 15. HDU Installed on HDU Mounting Bracket



1. Install the HDU (P/N 063-0173-887) on the HDU mounting bracket (P/N 107-0172-543) using two 1/4"-20 flanged lock nuts (P/N 312-1001-168).

FIGURE 16. HDU Mounting Bracket Installed



2. Secure the HDU mounting bracket in the access panel so that the HDU faces the cab wall using the existing mounting studs and four M6 flanged lock nuts (P/N 312-4000-216).

FIGURE 17. Access Panel to be Removed



3. Reinstall the wall panel behind the operator's seat.

INSTALL THE RS1 TEE CABLE

FIGURE 18. RS1 Tee Cable Connection



1. Connect the black 12-pin connector of the RS1 tee cable (P/N 115-4010-081) to the back of the RS1 unit.

FIGURE 19. RS1 Tee Cable Routing



RS1 Tee Cable
(P/N 115-4010-081)

2. Route the RS1 tee cable along the roof and down the back-right corner of the cab.
3. Locate the machine's 35-pin XB-5 BULKHEAD PRODUCT CAB connector located on the bottom left rear corner of the cab.
4. Disconnect the machine's XB-5 connector from the bulkhead.
5. Connect the machine's harness connector to the mating 35-pin connector on the RS1 tee cable.

FIGURE 20. RS1 Tee Cable Connected to Machine's Bulkhead



6. Connect the remaining 35-pin connector of the RS1 tee cable to the open port of the machine's bulkhead.

ROUTINE OPERATION

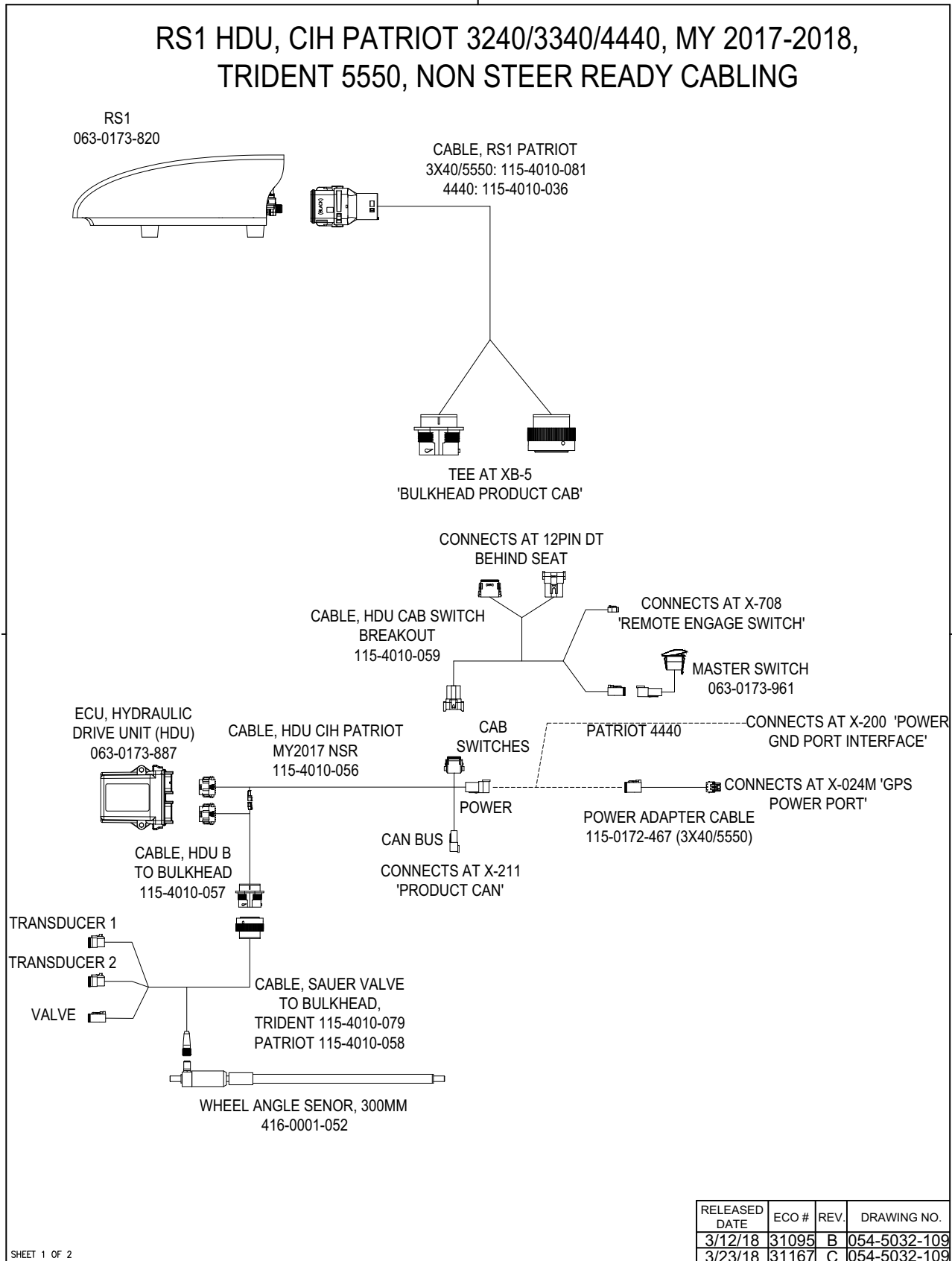
FIGURE 21. Resume Switch Locations



Locate and identify the resume switch on the joystick as it is required for RS1 system operation.

Refer to the Raven RS1 Guidance and Steering Calibration & Operation Manual (P/N 016-4010-001) for instructions on Calibrating the RS1 system, adjusting system settings, and system operation.

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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.