

Steering Ready Kit Installation Guide

Kit: EDX-SR-CSTX, P/N 911-3001-000

**Fits Case IH STX and New Holland
T9000 Models:**

275	325	425	500	T9020
280	330	430	530	T9030
	335	435	535	T9040
	375	440		T9050
	380	450		T9060
	385	480		
		485		



- NOTE:**
- (i) This installation kit is not applicable to Quadtrac machines.
 - (ii) The kit is specific to machines that:
 - Are AccuGuide Ready
 - Have the 19-pin ITT valve connection (located under the cab at the right rear corner - see photos at right).



Read and Follow Safety Messages

- In these instructions, you will see the heading WARNING and the safety alert symbol . They indicate a hazardous situation that, if not avoided, could result in death or serious injury. The safety messages provide information to identify a hazard associated with potential injury.
- Before installing, operating, or performing maintenance or service on any part of the system:
 - Read and understand this Steer Ready Kit Installation Guide
 - Read and understand the Steer Ready User Guide
- Do not allow anyone to operate without instruction
- Keep these instructions and all related safety information with the manual for your machine and other implements.

If you have any questions or need assistance, contact your local dealer or distributor.

Overview

A series of equipment specific kits has been developed to work in conjunction with your steer ready system. For the machine models listed above, these kits contain the components for:

- the wheel angle sensor (WAS) - if applicable
- the steering wheel switch (SWS - for steering override) - if applicable
- the electronic control unit (ECU)

The items in each applicable kit are detailed in the tables that follow the safety warnings on the next page. After the kit tables there are step-by-step installation instructions for each of the kits supplied.

Please read this manual thoroughly before beginning the installation.

⚠ WARNING:

To avoid serious injury or death during machine operation, install the appropriate kits for your tractor make and model.

Machine Preparation

⚠ WARNING:

Inspect the machine and perform any needed maintenance (for example, contaminated hydraulic fluid) before installing the Steer Ready Installation Kit. This kit cannot perform as intended on a machine that is not maintained properly. Errors in performance increase the risk of operator and bystander injury or death.

Failure to maintain clean hydraulic fluid and operational hydraulic components can cause loss of directional control resulting in serious injury or death.

Turn off the machine and power off all steer ready components when installing or performing maintenance.

Before attempting to install any of the components, park the machine on a clean level floor with adequate clearance to work all around.

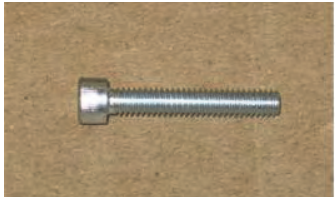
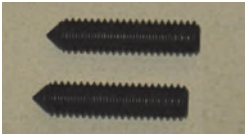
Before you perform any drilling, cutting or fastening, ensure that no other tractor components, such as electrical wiring, will be damaged. Failure to follow this warning may cause physical injury and/or damage to the machine.

Kit Contents - Wheel Angle Sensor

Unpack the wheel angle sensor kit and identify the required parts as shown. Kit items are A, B, C etc. with a W (Wheel) prefix.

REF	PART NUMBER	QTY	DESCRIPTION	PHOTOGRAPH
Bag 710-0099-000 (W1 of 3) contains WA to WF				
WA	720-0045-000#	1	WAS assembly	
WB	750-5002-000	1	Sensor, dual output, BEI	
WC	602-1087-000	1	Connector arm, steering, long	
WD	675-1191-000	2	Screw, mach, 8-32 x 3", PPH ZP	

Kit Contents - Wheel Angle Sensor *(continued)*

REF	PART NUMBER	QTY	DESCRIPTION	PHOTOGRAPH
WE	675-1054-000	3	Nut, nylock 8-32NC, ZP	
WF	675-1150-000	1	Screw, 8-32 x 1", Allen socket cap, ZP	
WG	675-2031-000	1	Threaded rod, 5/16-24 x 12"	
Bag W2 of 3 contains WH, WI and WJ				
WH	676-1053-000	4	Nut, 5/16-24 standard ZP	
WI	760-0018-000	2	Rod end swivel with stud, 5/16-24	
WJ	675-2010	2	Bolt, 5/16NC x 3/4" Gr5 ZP (WAS assembly to WN)	
Bag W3 of 3 contains WK and WL				
WK	675-2010	2	Bolt, 5/16NC x 3/4" Gr5 ZP	
	676-1036	2	Nut, nylock - 5/16NC ZP (WN to WO)	
WL	675-2043-000	2	Cone point Allen, 3/8-16 x 1-1/2", SSS, BO	
WM	675-0126-000	1	Threadlocker, Loctite 242, single use	

Kit Contents - Wheel Angle Sensor *(continued)*

REF	PART NUMBER	QTY	DESCRIPTION	PHOTOGRAPH
WN	640-0073-000	1	WAS assembly mounting bracket (Use with WO)	
WO	640-0085-000	1	WAS clamp bracket (Use with WN)	
WP	640-0074-000	1	WAS rod link bracket	

Kit Contents - Steering Wheel Switch

Unpack the steering wheel switch kit and identify the required parts as shown. Kit items are A, B, C etc. with an S (Switch) prefix.

REF	PART NUMBER	QTY	DESCRIPTION	PHOTOGRAPH
SA	478-0008	2	Magnet, flex - 1/2"W x 1"L x 1/8"T, plain 1	
SB	675-0077	1	Epoxy, Hardman 04001 - single double bub	
SC	602-1062	1	Steering wheel switch mounting bracket	
SD	726-1054	1	Steering wheel switch/cable assembly	
SE	677-2002	4	Tie strap, 7" releasable	

Kit Contents - Electronic Control Unit

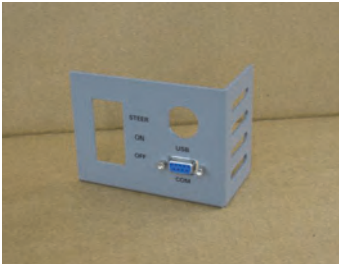
Unpack the electronic control unit kit and identify the required parts as shown. Kit items are A, B, C etc. with an E (Electronic) prefix.

REF	PART NUMBER	QTY	DESCRIPTION	PHOTOGRAPH
EA	051-0226-000#	1	Main cable	
EB	Not used	N/A	Not used/included in kit	N/A
EC	051-0250-000#	1	Steering controller main cable, PVED	
ED	051-0271-000#	1	Valve cable, CNH STX AccuGuide	
EE	051-0230-000#	1	WAS cable	
EF	051-0229-000#	1	SWS cable	
EG	054-0117-000	1	Power switch	

Kit Contents - Electronic Control Unit (*continued*)

REF	PART NUMBER	QTY	DESCRIPTION	PHOTOGRAPH
EH	051-0166-000#	1	CAN-PWR cable	
EI	806-1031-000#	1	Controller (ECU)	
EJ	750-5003-000	1	Steering controller	
EK	640-0091-000	1	ECU mount bracket	
EL	640-0102-000	1	Steering controller mount bracket, steer ready	

Kit Contents - Electronic Control Unit (*continued*)

REF	PART NUMBER	QTY	DESCRIPTION	PHOTOGRAPH
Bag E1 of 1 contains EM, EN, EO and EP				
EM	675-1197-000	4	Screw, self-drilling, #10-16 x 2-1/2", hex, ZP	
EN	675-1188-000	2	Screw, mach, M6 x 12mm, PPH, ZP	
EO	675-1210-000	2	Screw, mach, M6-1.0 x 16mm, PPH, ZP	
EP	675-2048-000	2	Bolt, 1/4NC x 1-1/2" Gr5 ZP	
	678-1073-000	2	Washer, flat - 1/4" ZP	
	676-1040	2	Nut, lock - 1/4NC ZP Gr5 ZP	
EQ	726-1093-000	1	Switch bracket	
ER	677-2001	20	Tie strap, 11" heavy duty	
ES	675-0153-000#	1	Dust cap, shell size 16, Rec TR	

Installation - Wheel Angle Sensor (WAS)

⚠ WARNING:

Switch off the machine's engine while installing or adjusting the WAS. Keep others away and stay clear of mechanical steering linkages to prevent serious injury or death from pinch point hazards while manually operating the hydraulic steering circuit.

1. Prepare the wheel angle sensor.

- a. Using the provided hardware **WE** (nuts) and **WD** (bolts - not shown), attach the WAS wire connector **WB** to the WAS housing **WA**. Install the bolts up through the bottom of the housing. Align the right edge of the connector (viewed from above, socket away from you) with the corner of the WAS housing (Figure 1a).

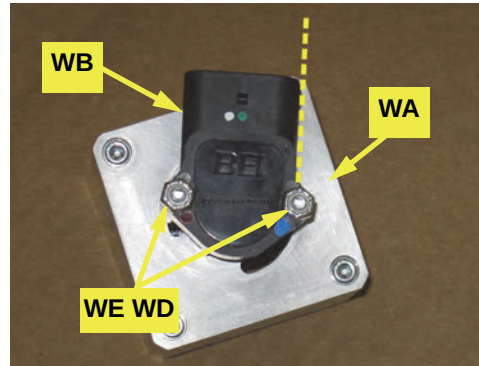


Figure 1a: Prepared WAS housing/connector

- b. Cut two holes off the WAS arm **WC** at the opposite end from the WAS shaft mounting hole (Figure 1b).

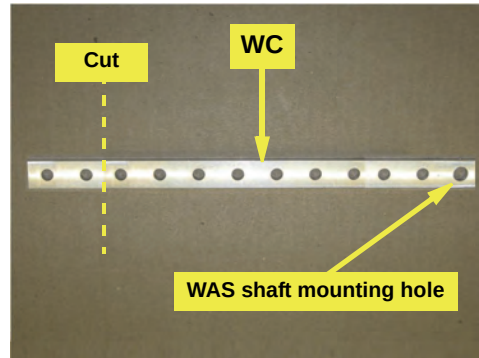


Figure 1b: WAS arm preparation

- c. Attach the WAS arm **WC** to the WAS assembly using hardware **WF** (screw) and **WE** (nut). Mount the arm **WC** in the same direction as the wire connector **WB** (Figure 1c).

NOTE:

*Before you cut the rod at step 1d below, screw the provided nuts **WH** onto the rod so that they are inside the cut you will make. After you have cut the rod, the nuts can help clean the threads.*

- d. Cut threaded rod **WG** $5\frac{3}{4}$ " long then screw the swivel rod ends **WI** onto the cut threaded rod to achieve a center-to-center stud measurement of 7" (Figures 1d-i and 1d-ii). Leave **WH** loose until you complete linkage adjustment at step 2.

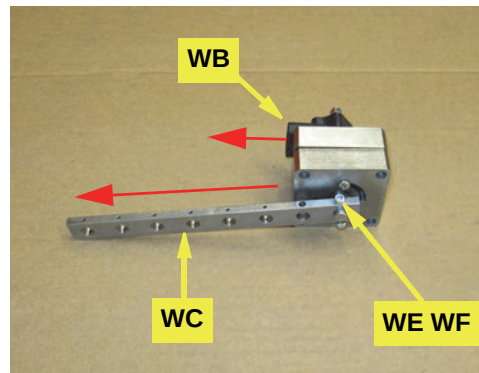


Figure 1c: Attached WAS arm

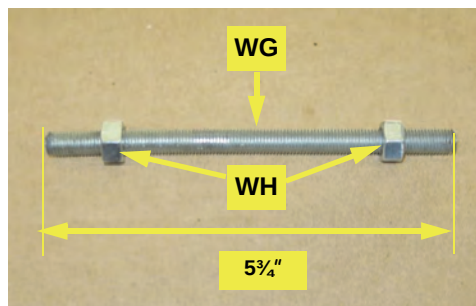


Figure 1d-i: Cut threaded rod

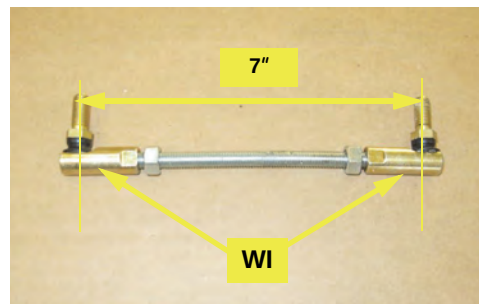


Figure 1d-ii: Assembled threaded rod

2. **Mount the wheel angle sensor.**

- a. Using hardware **WK**, fasten clamp bracket **WO** to extension bracket **WN** with the welded nuts on **WO** at the bottom. Use the top holes in bracket **WO** (Figure 2a).

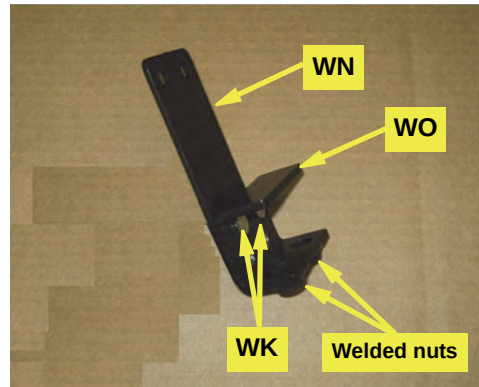


Figure 2a: Bracket assembly (WP and WN)

- b. Locate the top frame brace near the articulation point of the tractor (Figure 2b).
- c. To ensure a solid bracket mounting, apply the recommended amount of threadlocker **WM** to the cone point Allen set screws **WL** and attach the **WO/WN** bracket assembly to the back lip of the top frame brace (Figure 2c-i). The center of the assembled brackets must be 7" from the center of the articulation point (Figure 2c-ii).

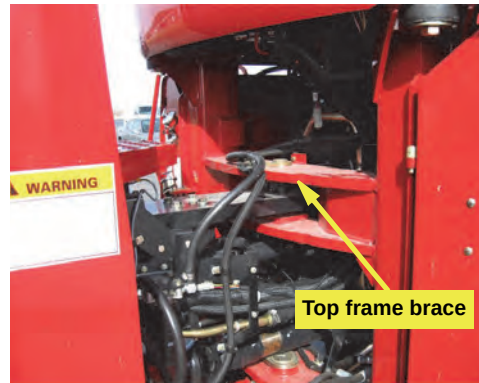


Figure 2b: Frame brace location

Using hardware **WJ**, attach the WAS assembly (from step 1) to bracket **WN**. The wire connector **WB** must face the front right section of the tractor (Figure 2c-i).

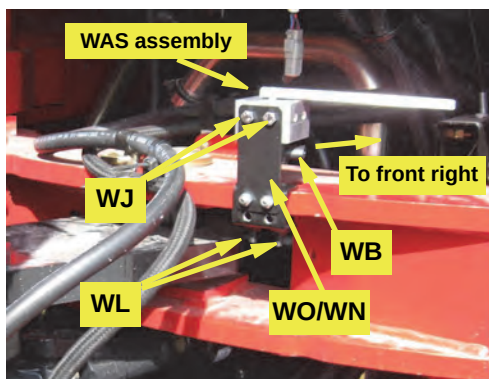


Figure 2c-i: Installed WAS bracket assembly and WAS assembly.

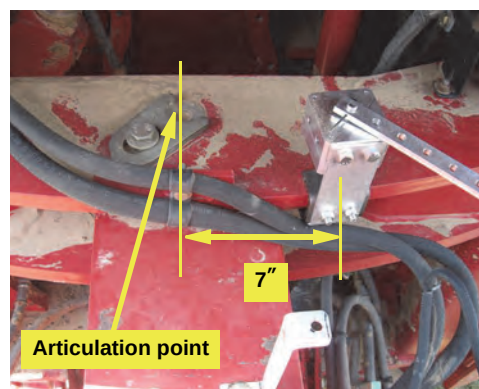


Figure 2c-ii: WAS assembled brackets location

2. **Mount the wheel angle sensor (continued).**
- d. Remove the front right bolt from the articulation linkage (Figure 2d-i) and use the bolt to install the WAS rod mounting bracket **WP** (Figure 2d-ii). Set the bracket at 90° right to the articulation linkage (Figure 2d-ii).

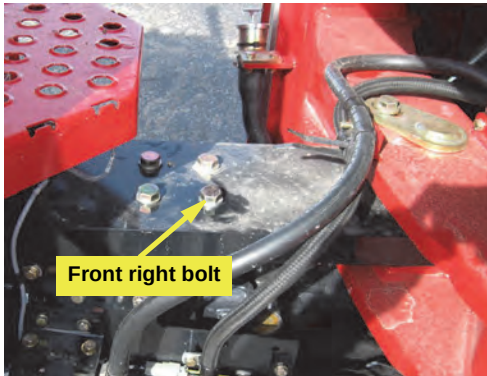


Figure 2d-i: Articulation linkage front right bolt

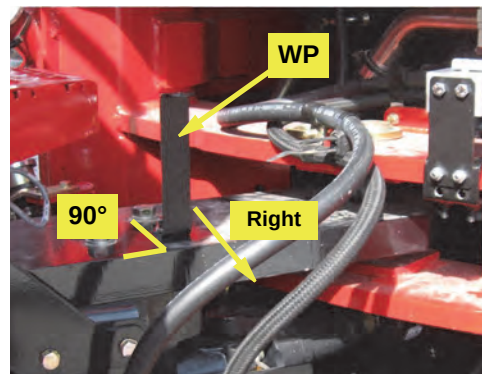


Figure 2d-ii: Installed WAS rod mounting bracket

- e. Using hardware **WH**, install the assembled WAS linkage from step 1d between the last hole in WAS connector arm **WC** and bracket **WP**. Set the swivel studs downward at both ends (Figure 2e). Leave the swivel nuts **WH** loose.
- f. With all hardware **WH** loose, slowly turn the wheels full left lock then full right lock. Check that the linkage moves freely without binding and adjust the linkage as necessary (Figures 2e and 2f).

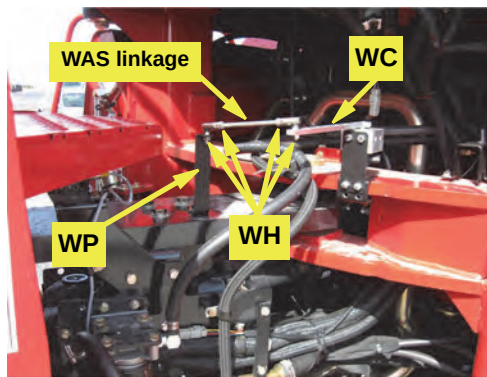


Figure 2e: Installed WAS linkage - full left lock



Figure 2f: Full right lock

- g. When the linkage does move freely and without binding, tighten hardware **WH** on the rod and the swivels (Figure 2e).

Installation - Steering Wheel Switch (SWS)

1. Install the steering wheel switch.

- a. Locate the steering shaft under the steering console near the cab floor. The shaft is surrounded by a metal shield (Figure 1a).

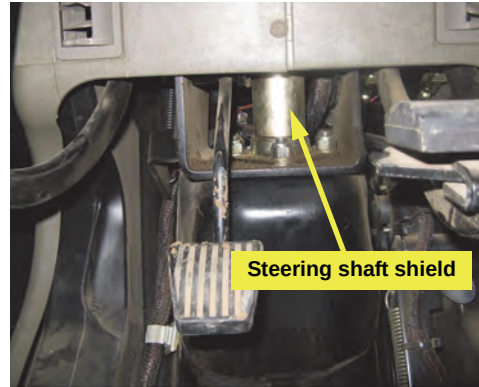


Figure 1a: Shielded steering shaft

- b. Drill a 3/8" hole in the sensor bracket **SC** at the opposite end from the sensor hole. Put a 90° bend in the end just drilled to 3/8" (Figure 1b).

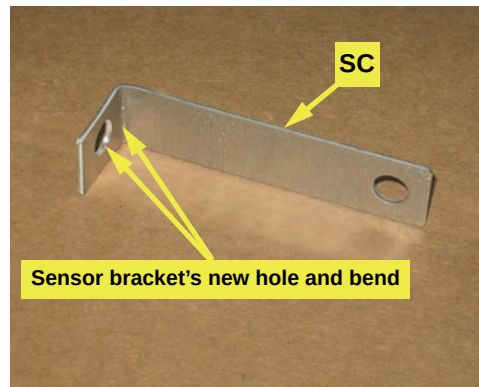


Figure 1b: Newly drilled/bent sensor bracket

- c. Remove the bottom steering shaft shield flange nut. Using the bent sensor arm as a template, drill a 1/2" hole in the steering shaft shield (Figure 1c).

Cut one of the magnets **SA** in half. Using the two-part epoxy **SB**, attach one half of the magnet to the inner steering shaft. Turn the shaft 180° and attach the other half magnet.

NOTE:

You do not need to use the second magnet on this installation.

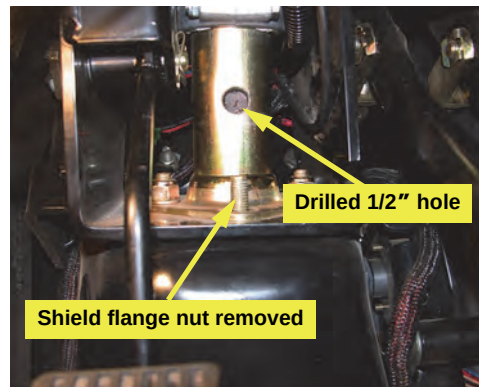


Figure 1c: Drilled shaft shield and installed magnets

- d. Attach sensor **SD** to the bracket **SC**. Fasten the sensor arm to the steering shaft shield flange with the nut removed at 1c (Figure 1d).
- e. Align the sensor **SD** with the magnets and adjust the sensor face to 1/8" to 1/4" from the magnets.

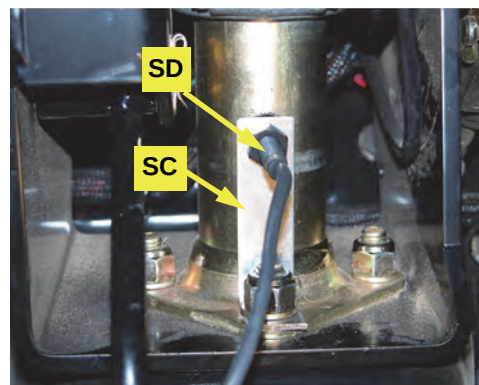


Figure 1d: Installed sensor arm

Installation - Electronic Control Unit (ECU)

See **Appendix A** for a schematic of the cable connections.

1. Install the ECU.

- a. Identify the ECU mounting location to the right of the driver's seat on the cab floor (Figure 1a).
- b. Facing the one inch tabs of bracket **EK** toward the right door/window, align the bracket parallel to the tractor. The bracket should be $6\frac{1}{2}$ " from the door/window and $2\frac{1}{4}$ " from the fuse box (Figure 1b).

Using hardware **EM**, fasten bracket **EK** to the floor (Figure 1b).

NOTE: Do not overtighten the self drilling screws. Overtightening could cause the fastener to fail.

Use a small level (not shown) to check the level of the bracket and adjust accordingly.

NOTE: In steps c, d and e following, you will mount the ECU (**EI**) directly against the inside face of bracket **EK** (the inside face being the face toward the driver's seat). You will mount the steering controller **EJ** indirectly against the outside face of bracket **EK** using a second bracket, **EL**. Mount both the ECU and the steering controller with their cable connectors toward the rear of the tractor.

- c. Using the shorter hardware **EN** through the rear-most holes in bracket **EK**, attach **EI** (cable connectors rearward) loosely to the inside face of bracket **EK** (Figure 1c - viewed from right window).
- d. Using the longer hardware **EO** through the narrow side of bracket **EL** (wider side forward) and the remaining holes in bracket **EK**, secure **EI** and **EL** to **EK** (Figure 1c). Tighten **EN** and **EO**.

NOTE: It may be necessary to attach the ECU main cable **EA** to the ECU **EI** before attaching the ECU to its bracket **EK**. See step 2a on page 13 for connection details.

- e. Using hardware **EP**, attach steering controller **EJ** (cable connectors rearward) to its bracket **EL** (Figure 1d - viewed from right window).



Figure 1a: ECU mounting location

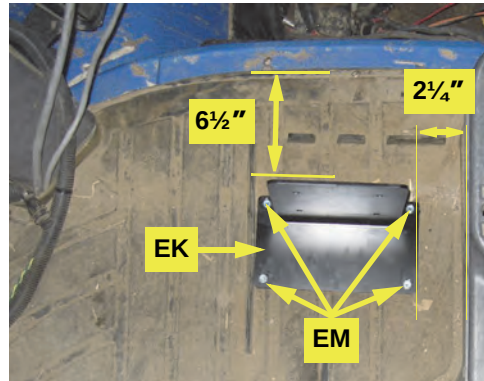


Figure 1b: Installed ECU mounting bracket

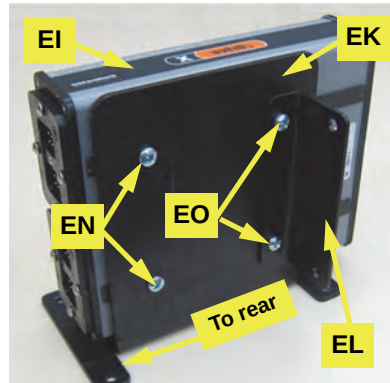


Figure 1c: Installed ECU and steering controller bracket

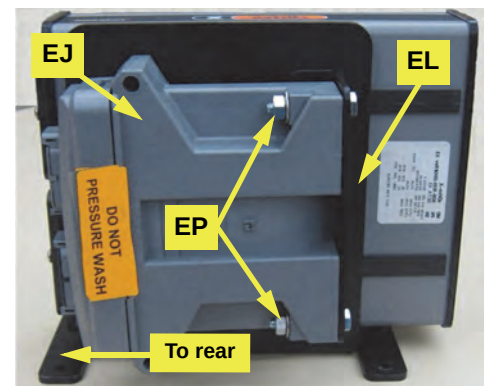


Figure 1d: Installed steering controller

2. Assemble and install the cables.

On a clean surface, lay out all the cables and become familiar with the connections and where they are to be placed. See Appendix A.

- a. If not already attached, attach main cable **EA** to **EI** using an Allen wrench to secure it. The **EA** connector only connects with the **EI** socket that is in line with the power and communications indicators at the opposite end of the ECU—the upper socket in this installation (Figure 2a).

Connect steering controller cable **EC**'s two 12-pin connectors (black and gray) to their respective sockets on the steering controller **EJ** (Figure 2a).

- b. Locate the 19-pin ITT connector on the underside of the cab in the right rear corner (Figure 2b). Disconnect the cable and seal (weatherproof and dust-proof) the exposed male pin plug (which will no longer be used - Figure 2b top right inset) with dust cap **ES**.

Connect valve cable **ED** to the open (female) plug you disconnected (Figure 2b bottom left inset).

- c. Route **ED** up into the cab through the cab access hole (Figure 2c-i) into the fuse box, then out through the side of the fuse box (Figures 2c-ii and 2c-iii). Connect **ED** to cable **EC**'s connector labeled 'PVE'.

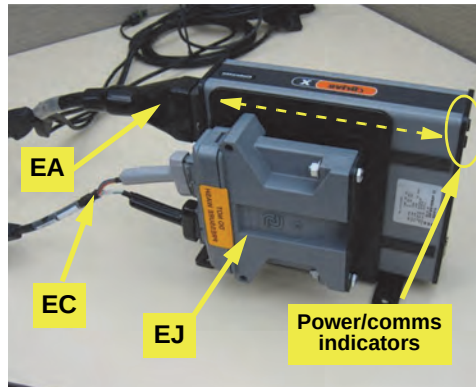


Figure 2a: Cables connected to ECU and steering controller

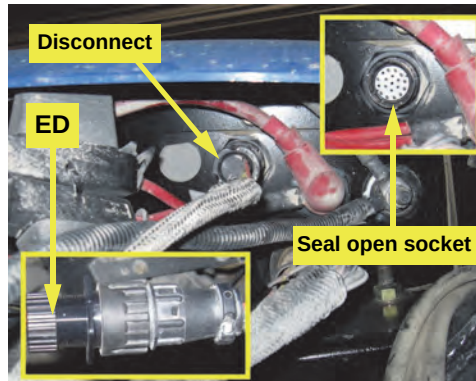


Figure 2b: Connections at the 19-pin ITT connector under the cab on the right rear corner



Figure 2c-i: PVE and WAS cables routed through the cab access hole

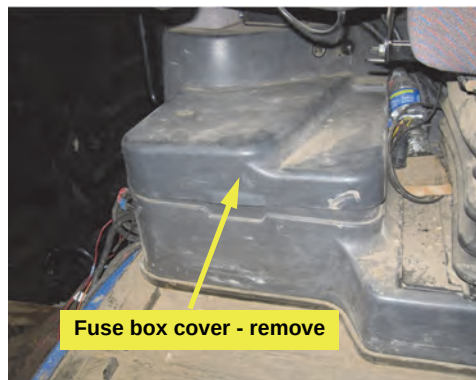


Figure 2c-ii: Fuse box cover

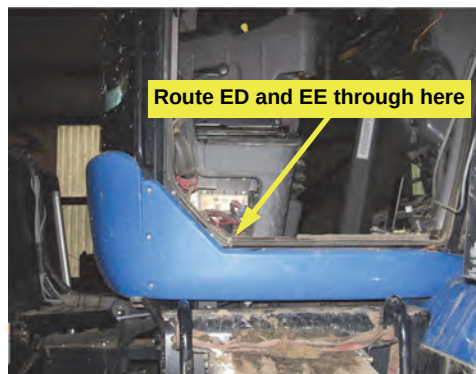


Figure 2c-iii: Fuse box side opening

2. **Assemble and install the cables (continued).**

- d. Install WAS cable **EE** between **EC**'s connector labeled 'WAS' and the wire connector (**WB**) of the WAS assembly installed at the articulation joint (Figure 2d). Route the cable through the cab access hole and the fuse box side opening.
- e. Install SWS cable **EF** between **EC**'s connector labeled SWS and the sensor switch cable of **SD** (installed at step 1d of the SWS installation section).

NOTE: Route cables with existing cables and hoses where applicable and use heavy duty ties **ER** as required.

- f. Attach power switch **EG** to cable **EA**'s connector labeled 'SWITCH'. Some machines are equipped with pop out tabs that you can remove and replace with switch **EG**. If no tab is available, you can use bracket **EK** mounting it in the cab at the operator's preferred location. Route the cable in the cab so that it is clear of any machine operation controls.

NOTE: Set the switch to **OFF** before connecting **EA** to the battery and step h below.

- g. Connect CAN-PWR cable **EH** to **EA**'s open connection labeled 'TERMINAL/RECEIVER'. Route the cable in the cab so that it is clear of any machine operation controls. Connect the opposite end of the cable **EH** to the guidance terminal.
- h. Route the power cable on **EA** to a 12V battery on the tractor and connect it.

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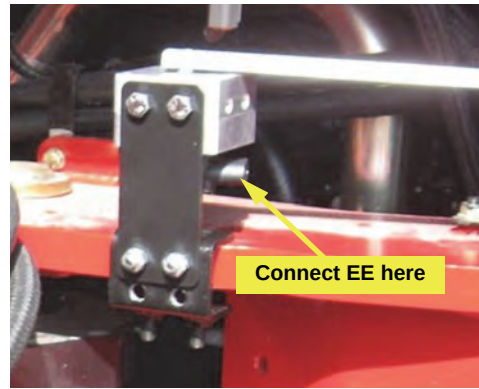


Figure 2d: WAS assembly wire connector

Appendix A - ECU Cables and Connections

