Steer Ready Kit Installation Guide

Kit: EDX-SR-JD8030, P/N 911-3002-000

Fits John Deere Tractor Models:

7630	**8130**
7730	**8230**
7830	**8330**
7930	**8430**
	8530

NOTE: *1. This installation kit is specific to the John Deere models listed above that have standard or heavy axles only and that do not have a hydraulic flow meter. If your machine does not meet these criteria or you are unsure of your axle type or if you have a hydraulic flow meter, contact your local dealer before continuing this installation.*

2. The locations at which some of the steer ready connections are made are different for the 70 series and 80 series machines. Where necessary, this guide makes it clear which machines the instructions apply to.

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 installation guide and all of the safety information
  - 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 below. 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 kit for your machine 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.

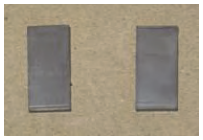
Turn off the machine and power off all Steer Ready components when installing or performing maintenance.

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 machine components, such as hydraulic hoses or electrical wiring, will be damaged. Failure to follow this warning may cause physical injury and/or damage to the machine.

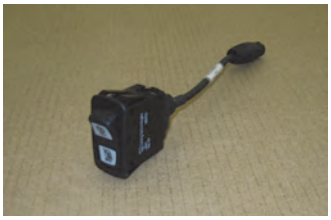
Kit Contents - Steering Wheel Switch

Unpack the steering wheel switch kit and identify the required parts as shown. Kit items are A, B, C etc. with an S (Steering) 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	Bracket, steering wheel switch mounting	
SD	726-1054	1	Assy, eDrive steering wheel switch	
SE	677-2002	4	Tie strap, 7" releasable	
Bag S1 of 1 contains SF				
SF	675-1138-000	1	Screw, self drilling, 8-18 x 3/4" Hex	

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	ECU 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	051-0251-000#	1	SR valve cable	
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	
EM	726-1093-000	1	Switch bracket	

Kit Contents - Electronic Control Unit *(continued)*

REF	PART NUMBER	QTY	DESCRIPTION	PHOTOGRAPH
Bag E1 of 1 contains EN, EO, EP and EQ				
EN	675-1190-000	4	Screw, self drilling, #10 x 1-1/2", Hex ZP	
EO	675-1188-000	2	Screw, mach, M6 x 12mm, PPH ZP (Mount ECU EI on EK)	
EP	675-1210-000	2	Screw, mach, M6-1.0 x 16 mm, PPH ZP (Mount ECU EI and EL on EK)	
EQ	675-2048-000 678-1073-000 676-1040	2 2 2	Bolt, 1/4"-20 x 1-1/2", Gr5 ZP Washer, flat - 1/4"ID x 5/8"OD x 1/16" thk Nut, 1/4NC Gr5 ZP (Mount steering controller EJ on EL)	
ER	051-0253-000#	1	WAS phantom plug, JD8030 AutoTrac	
ES	051-0252-000	1	WAS adapter, JD8030	
ET	677-2002	20	Tie strap, 7" releasable	

Installation - Steering Wheel Switch (SWS)

1. Prepare and attach the steering sensor mounting.

a. Pull the fan control knob off its spindle then locate and remove the six screws securing the top and bottom steering column covers. Remove the covers (Figure 1a and inset).

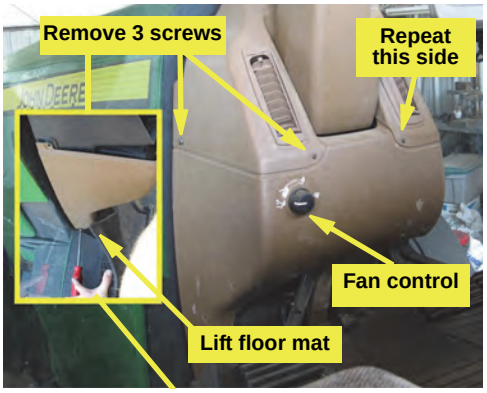


Figure 1a (with inset): Removing steering column cover screws

b. With the column covers removed, peel back the rubber flooring to expose the steering shaft and the raised front edge of the metal floor pan (Figure 1b).

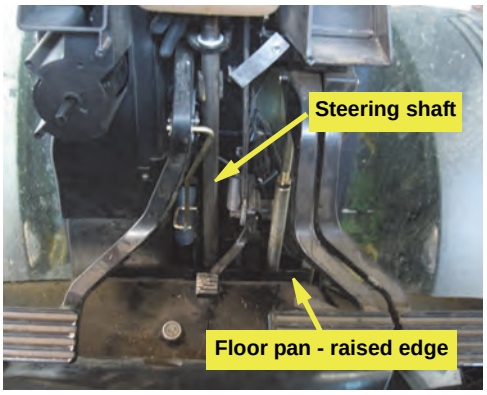


Figure 1b: Floor pan edge and steering shaft

c. Cut the aluminum sensor bracket **SC** 2¼″ from the end with the pre-drilled sensor mounting hole (Figure 1c - top), then drill a 5/32″ pilot hole on the centerline of the bracket. Drill the hole so that its center is 1/4″ from the cut end (Figure 1c - bottom).

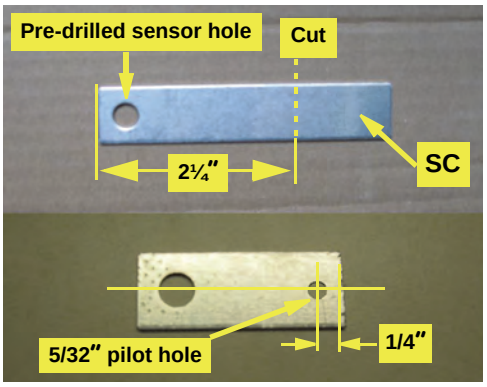


Figure 1c: Cut and drilled sensor bracket

d. Put a 90° twist in the bent, drilled sensor bracket. Before twisting, ensure that:

- The inside edge of your first grip is at least 5/8″ from the end with the pre-drilled sensor mounting hole (to ensure that the twist does not interfere with the sensor mounting hole).
- The inside edge of your second grip is 1″ from the recently cut end (Figure 1d - not to scale).

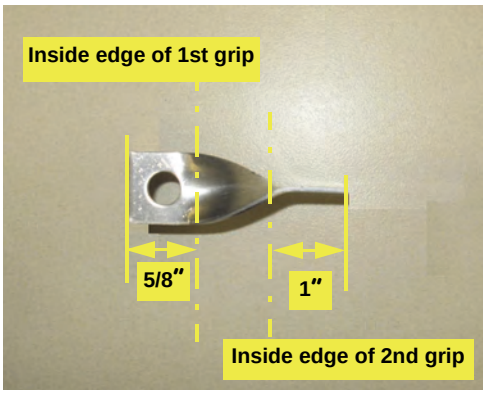


Figure 1d: Twisted bracket (not to scale)

1. Prepare and attach the steering sensor mounting *(continued)*.

e. Attach the twisted aluminum bracket **SC** to the raised edge of the floor pan using the self-drilling screw **SF** through the pilot hole. Position the center of the pilot hole 1″ from the centerline of the steering shaft (Figure 1e).

f. Carefully bend the bracket forward until the center of the sensor hole aligns with the center of the steering shaft (Figure 1e).

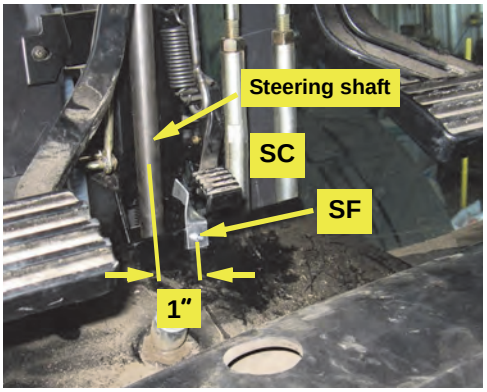


Figure 1e: Installed sensor/sensor bracket

2. Attach the magnets and install the steering sensor.

Thoroughly clean two areas of the steering shaft, 180° apart, so that you can attach the magnets with their centers aligned with the center of the sensor hole in the sensor bracket.

a. Mix epoxy **SB** as directed on the package then attach both magnets **SA** to the cleaned steering shaft 180° apart. Align the center of each magnet with the center of the sensor hole in the sensor bracket (Figure 2).

b. Install the steering sensor **SD** in its bracket. Set the sensor tip 1/8″ to 1/4″ from the magnets (Figure 2). (You will connect **SD** to the ECU in the next section).

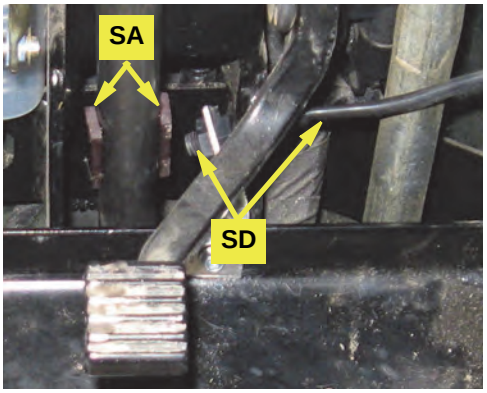


Figure 2: Attached magnets and installed sensor

NOTE: *After installation, turn the steering wheel to check for clearance between magnets and sensor.*

c. Refit the steering column covers and the fan control knob.

Installation - Electronic Control Unit (ECU)

1. Install the ECU.

a. Locate the ECU mounting location to the left of the driver's seat on the cab floor (Figure 1a).

Figure 1a: Mounting location

b. Facing the one inch tabs of bracket **EK** toward the driver's seat, align the bracket parallel to the machine's seat frame. The bracket should be 3″ from side of the seat frame and 10½″ from the front edge of the seat frame (Figure 1b).

Using hardware **EN** fasten the bracket to the cab floor. Using a small level (not shown), level the bracket as close as possible.

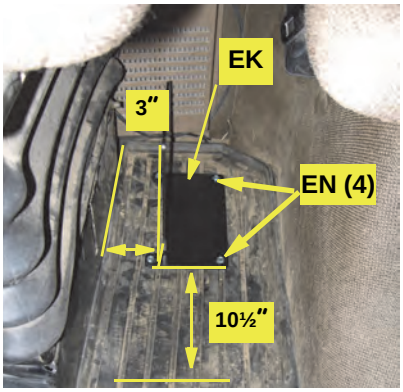


Figure 1b: ECU bracket installation

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 away from 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 **EI** and **EJ** with their cable connectors towards the rear of the machine.*

NOTE: *It may be necessary to attach cable **EA** to the ECU before attaching the ECU to its bracket **EK**. See step 2a on page 9 for connection details.*

c. Using the shorter hardware **EO** 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 driver's seat side).

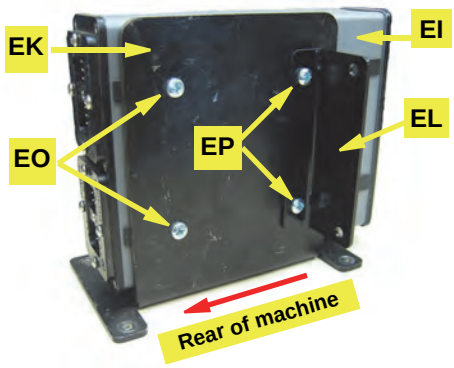


Figure 1c: Installed ECU and controller bracket (viewed from driver's seat side)

d. Using the longer hardware **EP** 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 **EO** and **EP**.

e. Using hardware **EQ**, attach steering controller **EJ**, connectors rearward, to its bracket **EL** (Figure 1d).

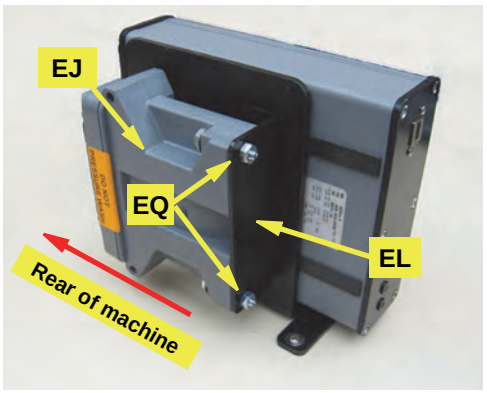


Figure 1d: Installed steering controller

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 the cable. 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 lower socket in this installation (Figure 2a).

Attach steering controller cable **EC**'s two 12-pin plugs to the corresponding gray and black connectors on the steering controller **EJ** (Figure 2a).

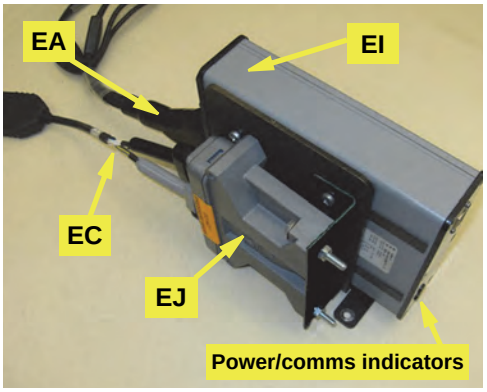


Figure 2a: Installed ECU and steering controller cables

b. Connect **EC**'s connector labeled ECU to **EA**'s connector labeled 'STEERING CONTROLLER' (not shown).

c. Connect WAS cable **EE** and SR valve cable **ED** to **EC**'s connectors labeled 'WAS' and 'PVE' respectively**.** Route the cables, with the power cable from **EA,** out the back window and down to the left side of the machine. Route the cables along the frame with existing cables and hoses (Figure 2b).

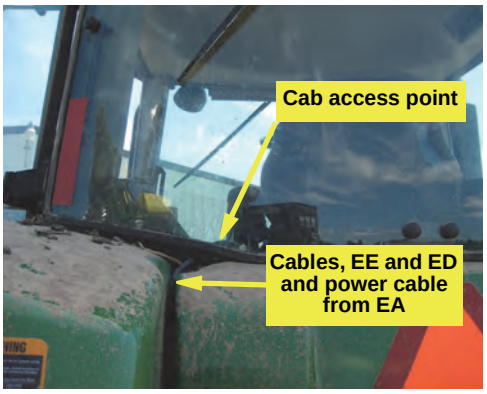


Figure 2b: Cables out from cab

NOTE: *Steps d to h following are applicable to 80 series machines. Steps i to m are applicable to 70 series machines.*

Connections for 80 Series Machines

d. Locate the factory installed WAS wire and connector on the left side of the machine near the air filter housing. Disconnect the wire connection being careful not to damage the connector (Figure 2c with inset).

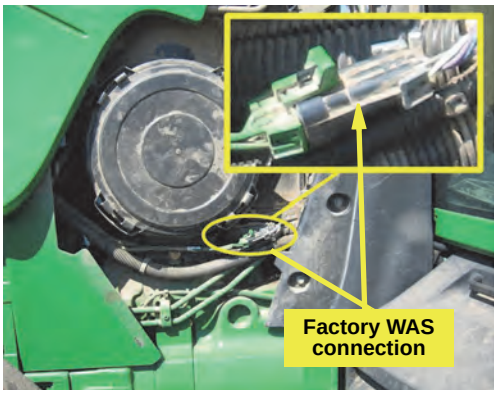


Figure 2c with inset: 80 series - factory WAS connection

e. Install the male phantom plug **ER** in the machine's female WAS wire connector (Figure 2d - upper connection).

Connect WAS adapter **ES** to routed WAS cable **EE** then connect **ES** to the machine's male WAS connector (Figure 2d - lower connection).

Secure the routed cables with tie straps **ET**.

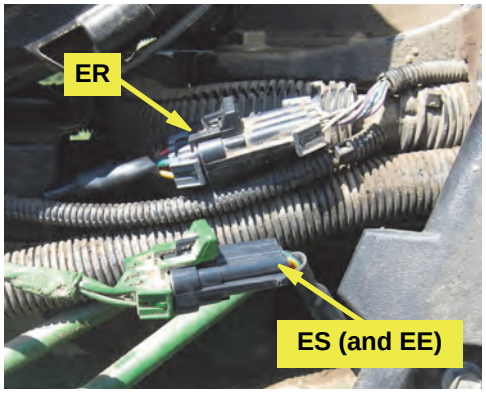


Figure 2d: 80 series - installed phantom plug and connected WAS adapter and WAS cable

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

Connections for 80 Series Machines *(continued)*

f. Locate the PVED valve in front of the cab (Figure 2e). Remove the plastic shield to gain access.

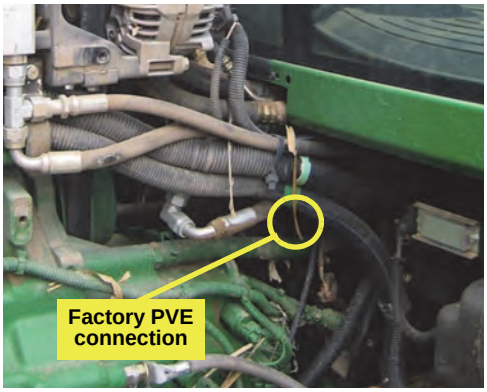


Figure 2e: 80 series - PVE connection location

g. Locate and disconnect the 4-pin wire connector from the PVED valve (Figure 2f). Weatherproof the disconnected cable connector. Connect SR valve cable **ED** to the open wire connector on the PVED valve (not shown).

h. Using tie straps **ET**, fasten cables **EE**, **ED** and the disconnected PVED cable to existing cables and hoses so that they are free from moving parts.

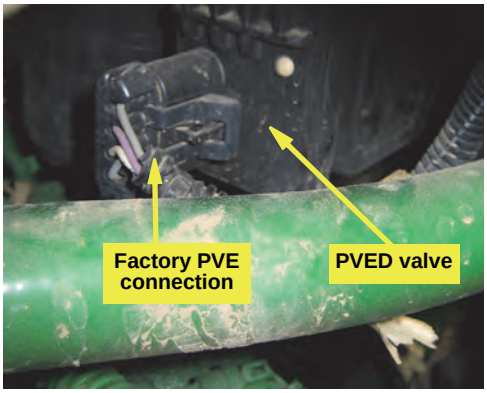


Figure 2f: 80 series - factory PVE connection

Connections for 70 Series Machines

i. Locate the factory installed WAS wire and connector inside the machine's frame, near the engine oil dipstick (Figure 2g with inset).

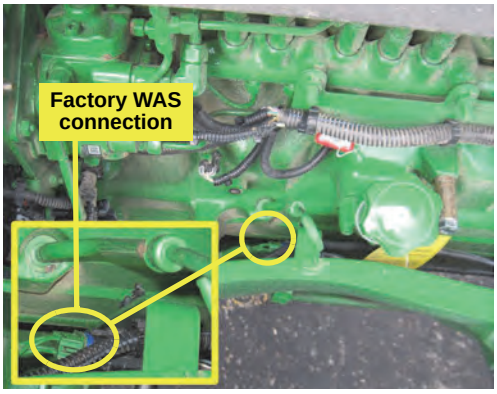


Figure 2g with inset: 70 series - factory WAS connection

j. Disconnect the wire connection being careful not to damage the connector (Figure 2h inset). Install the male phantom plug **ER** in the machine's female WAS wire connector (Figure 2h - upper connection).

Connect WAS adapter **ES** to routed WAS cable **EE** then connect **ES** to the machine's male WAS connector (Figure 2h - lower connection).

Secure the routed cables with tie straps **ET**.

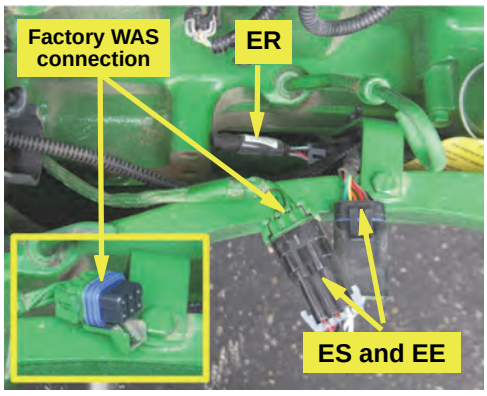


Figure 2h with inset: 70 series - installed phantom plug and connected WAS adapter and WAS cable

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

Connections for 70 Series Machines *(continued)*

k. On the left side of the machine, remove the battery cover, the windscreen washer reservoir cover and the reservoir itself. Locate the 4-pin wire connector from the PVED valve (Figure 2i).

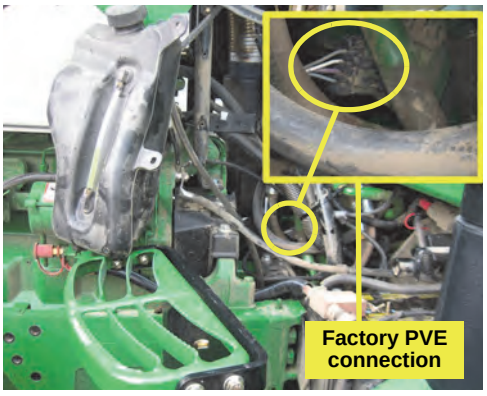


Figure 2i with inset: 70 series - PVED connection location

l. Disconnect the 4-pin wire connector from the PVED valve. Weatherproof the disconnected cable connector. Connect SR valve cable **ED** to the open wire connector on the PVED valve (Figure 2j).

m. Using tie straps **ET**, fasten cables **EE**, **ED** and the disconnected PVE cable to existing cables and hoses so that they are free from moving parts.

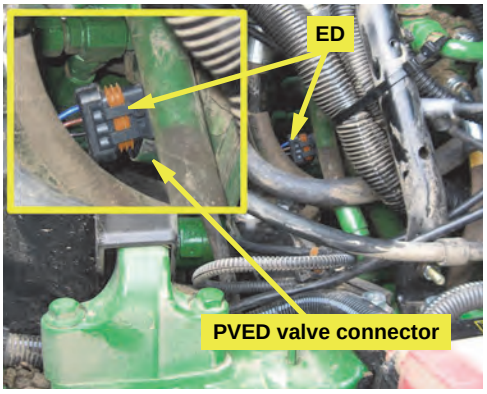


Figure 2j with inset: 70 series - PVE cable at PVED connector

NOTE: *The remaining steps are applicable to all machines.*

n. Install SWS cable **EF** between **EC**'s connector labeled 'SWS' and SWS switch **SD**'s cable installed at step 2b of the SWS installation section.

o. 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 **EM** mounting it in the cab at the operator's preferred location. Route the cable in the cab so it is clear from any machine operation controls.

NOTE: *Set the switch to **OFF** before connecting **EA** to the battery at step q below.*

p. 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 cable **EH** to the guidance terminal.

⚠WARNING:

*Ensure **EA** is connected to the ECU (step 2a) and the power cable part of cable **EA** is reconnected to **EA** before you connect to the machine's battery at the next step.*

q. Route the power cable part of cable **EA** (routed from the cab at step 2c) to the machine's battery and connect it.

Appendix A - ECU Cables and Connections