INSTALLATION MANUAL

Agra-GPS CNH-JD Bridge for Titan Spreader / Patriot with Raven Smartrax

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Release Notice

This is the April 2025 release of the CNH-JD Bridge for 2012 CNH Titan spreader.

Disclaimer

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DO NOT USE THE CNH-JD Bridge IF YOU DISAGREE WITH THE DISCLAIMER.

Important Safety Information

Read this manual and the operation and safety instructions carefully before installing the CNH-JD Bridge.

- Follow all safety information presented within this manual.
- If you require assistance with any portion of the installation or service of your equipment, contact your Agra-GPS for support.
- Follow all safety labels affixed to the 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 Agra-GPS.

When operating the machine after installing the CNH-JD Bridge, observe the following safety measures:

- Be alert and away of surroundings.
- Do not operate the CNH-JD Bridge system while under the influence of alcohol or an illegal substance.
- Remain in the operator's position in the machine at all times while the CNH-JD Bridge system is engaged.
- Determine and remain a safe working distance from other individuals. The operator is responsible for disabling the CNH-JD Bridge system when a safe working distance has been diminished.
- Ensure the CNH-JD Bridge is disabled prior to starting any maintenance work on the machine or parts of the CNH-JD Bridge system.
- Follow all safety instructions from the CNH system as well as the JD system!
- The CNH-JD Bridge must only be used in the field, never on the street!

Electrical Safety

- 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.
- Verify that all cables and connectors are not going over sharp edges and are not pinned, as this could cause power shortages and/or malfunctions.

Introduction

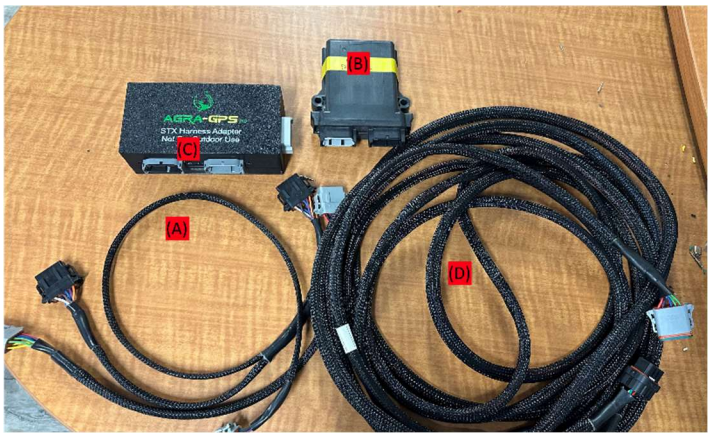
Congratulations on your purchase of the CNH-JD Bridge. The CNH-JD Bridge is designed to bridge the communication between CNH Patriot Sprayer and a John Deere display (1800, 2600, 2630,4240,4640 or the new 5th gen display). This allows a JD display to create maps in the John Deere format and provides straight AB-Line autosteer.

The operator uses the JD display to create AB-lines. The current position is determined by a John Deere receiver and all this information is used by the CNH-JD Bridge to create steering instructions for the tractor. All conditions for autosteer such as minimum speed, steering enabled etc. must be met by the CNH system before the autosteer engage option in the tractor can be activated.

NOTICE

This manual is not intended to replace the manuals for the tractor or the John Deere system. The operator must read and understand the manuals and instructions of these systems, before using the AgraGPS CNH-JD Bridge.

What's In The Box

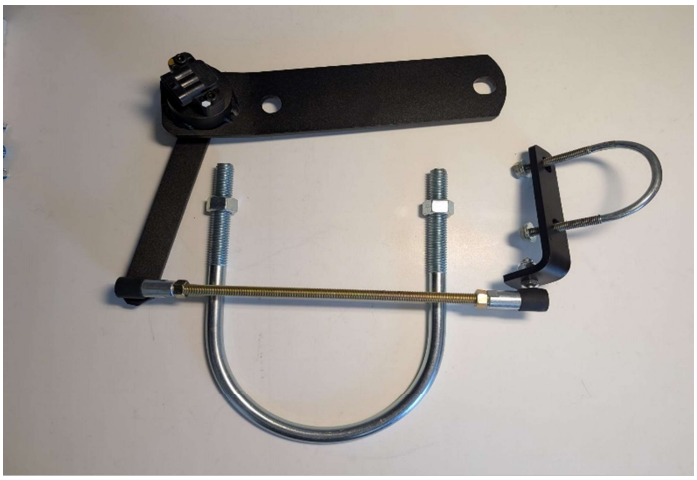


In your order you should receive the following items:

a. CNH-JD-TITAN Harness Kit
b. CNH-JD-TITAN Bridge
c. Harness Adapter
d. JD 12 Harness
e. Wheel Angle Sensor kit

NOTE: If you are missing any of these items or they appear to be damaged please contact +1 (825) 247-2477 or support@agragps.com

Titan:



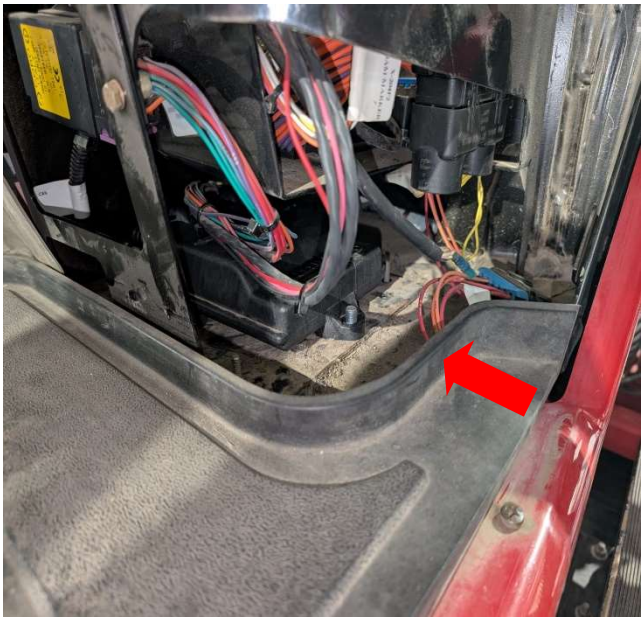
Patriot :

Step 1: Mounting the CNH-JD Bridge

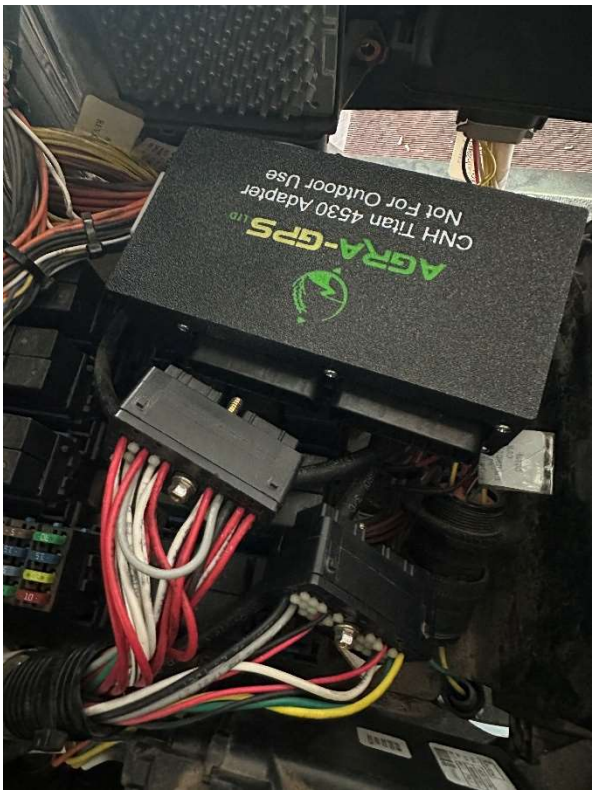
Remove the buddy seat

Remove the plastic cover that was under the buddy seat, there are bolts under the rubber floor mat that must be removed. You will also have to remove some plastic clips

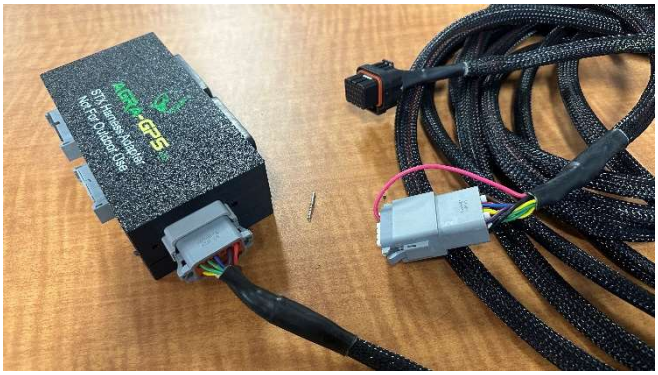
At the bottom, underneath the fuse panel there will be a large black Raven SmartTrax node controller. Remove both the 30 pin connectors from the control unit.



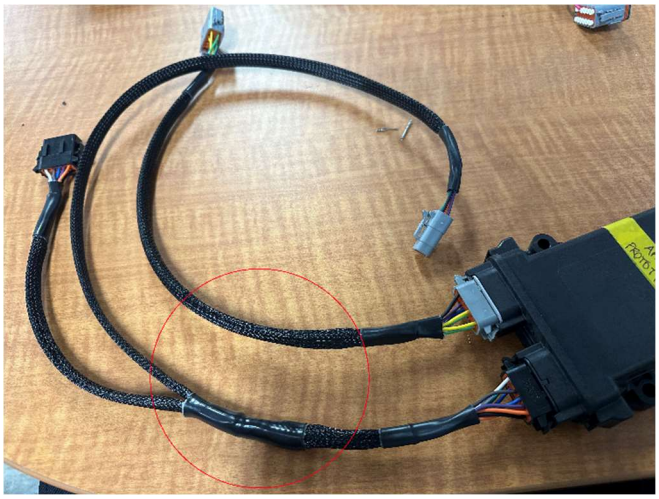
Connect both plugs to the Agra adapter box.



Next connect the JD-12 harness female 12-pin Deutsch into the **Harness Adapter**.



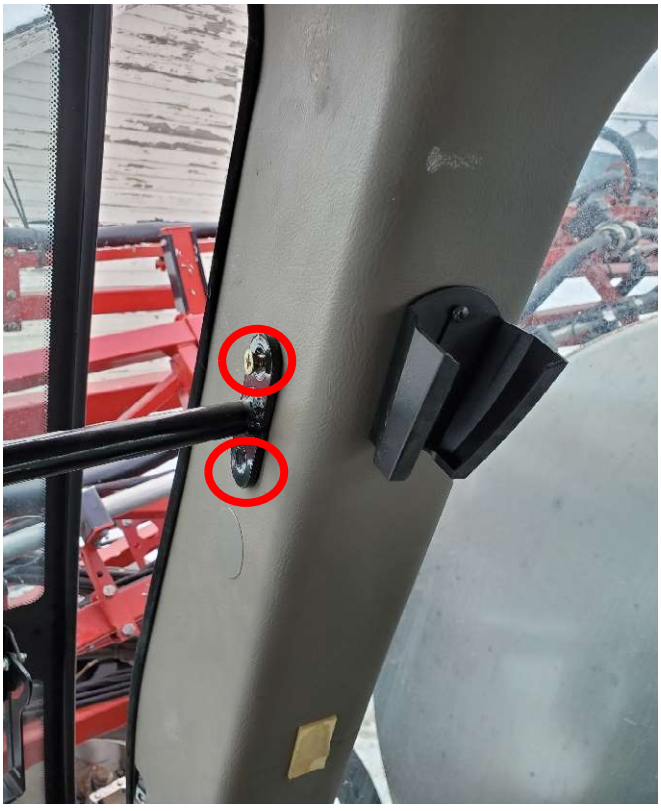
Then insert the **two 12-pin Deutsch mini-plugs** into the **Agra-GPS Bridge**. Use the harness lead that includes the **4-pin Deutsch connector** for this connection.



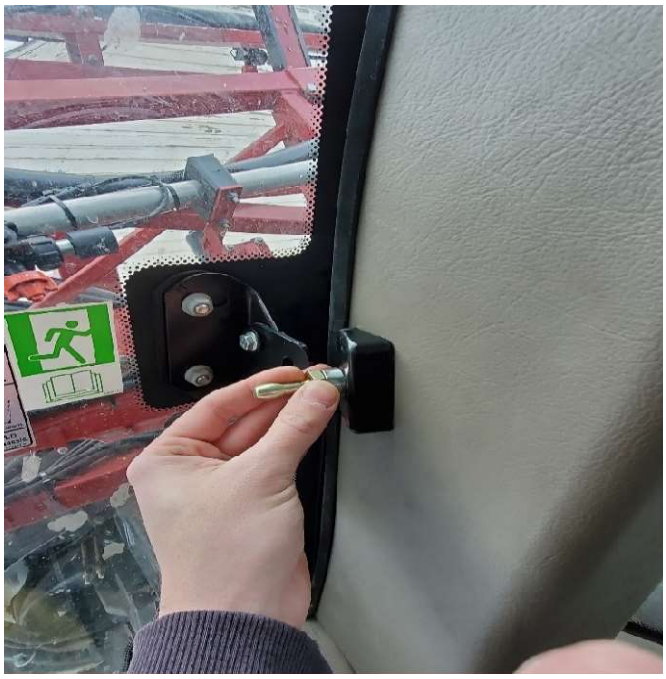
Then connect the remaining **12-pin Deutsch mini-plugs** (from the harness lead *without* the 4-pin connector) to the **Harness Adapter**. Verify all connections are seated properly before proceeding to the monitor setup.

Next you will need to remove the cover from the right rear corner post.

Remove the bolts holding the crossbar to the corner post.

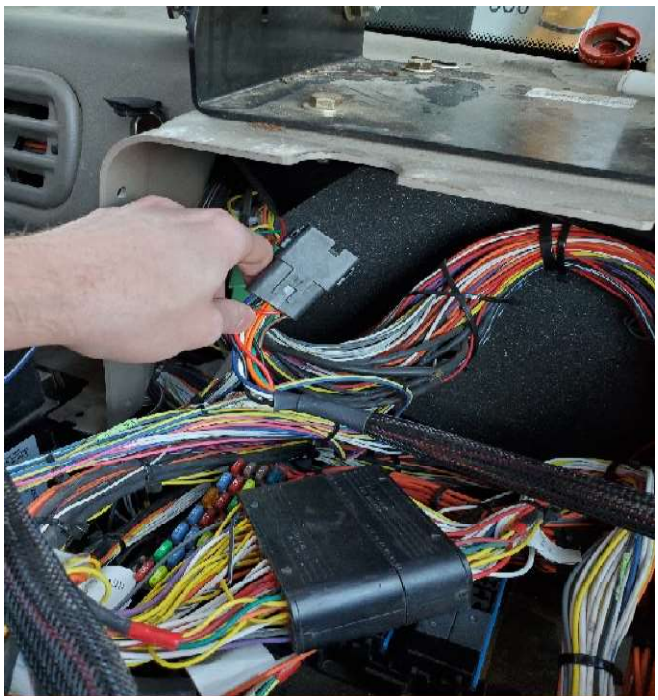


Remove the side door latch.



Remove the plastic cover revealing the post.

The adapter from the fuse panel section can now be fed through behind the plastic behind the seat, through to the right corner post.



The “vent” behind the seat can be removed to assist in feeding the cable through to the corner post.

Run the harness for the globe up through the bottom of the corner post

With the side window open run the display cable out the end of the rear compartment.

Step 2: Installing the 12 pin bulkhead receiver plug

Remove the 12 pin plug from the wire harness by first pulling out the center plug, then prying on the inner tabs and working the wires back and forth until they are free

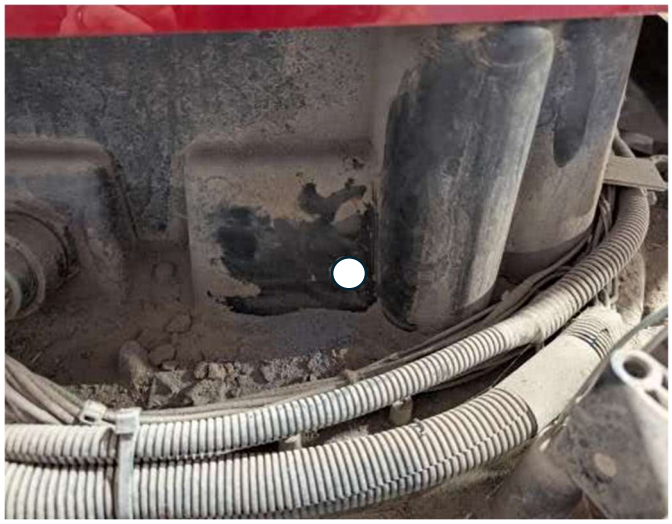
Now move to the outside of the cab. Remove all hardware and accessories from the roof cap

There is 2 nuts on the underside of the roof. 1 is located on the rear side directly in the center.

The other is on the front side in the center as well. The easiest way to access this nut is to power on the machine, turn on the wipers and shut the main power off when the wiper is pointing straight down. Fold the wipers back for direct access.

Lifting gently and working from one side to the other the cap will come up. Place a soft object under the middle of the roof cap to create a working area

Drill a 1/2” hole on the flat surface to the right of the factory wiring harness located on the right rear corner of the inner cab shell.



Now run the receiver wiring up the corner post and through the newly drilled hole

Reconnect the 12 pin plug to the harness.

Pinout:

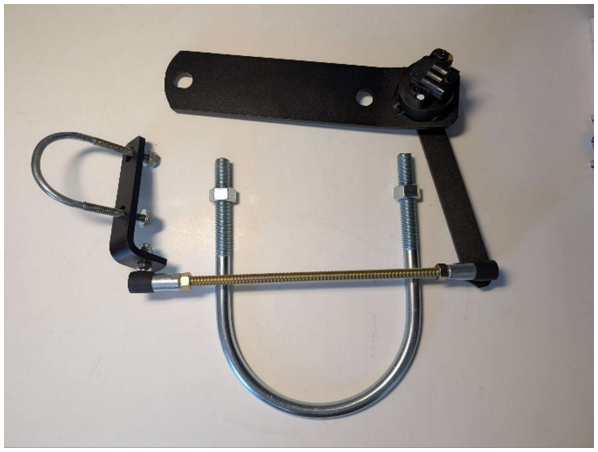
1 – brown
3 – blue
4 – yellow
6 – purple
7 – black
9 – green
10 – orange
12 – red

Run the receiver cabling along the right side of the inner cab shell with the existing factory wiring. Install the 12 pin bulkhead plug into roof shell using the supplied hardware. After verifying there is appropriate slack use zip ties and silicone where necessary. Reinstall roof cap working side to side and checking all edges before tightening down.

Step 3: Titan wheel angle sensor installation

The machine requires the installation of a wheel angle sensor. For best results park the machine with the front tires pointed straight forward.

The sensor kit includes these components:



The steering sensor is installed on the back side of the front axle. The smaller end attaches to drag link.

Use the supplied 7” U bolt to install the angle sensor housing

Install the sensor housing on the topside of the front axle. With the sensor pin pointed straight back there needs to be 1-1.5 inches of clearance above the drag link.

With the front tires set in the straight forward position and the sensor pin pointing straight back the drag link connection can be made.

Be sure to verify clearance with hoses.

Run the supplied wheel angle sensor harness out the bottom of the right side door. Using zip ties secure the cabling to the hydraulic steering hoses. Be sure to leave slack to allow for axle movement. Connect to the sensor

Step 3: Patriot wheel angle sensor installation

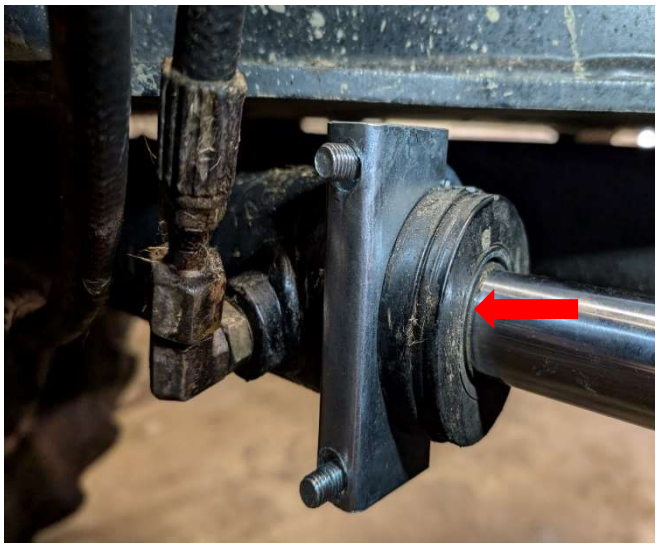
The machine requires the installation of a wheel angle sensor.

The sensor kit includes these components:

The sensor is installed on the hydraulic cylinder of the front right wheel.

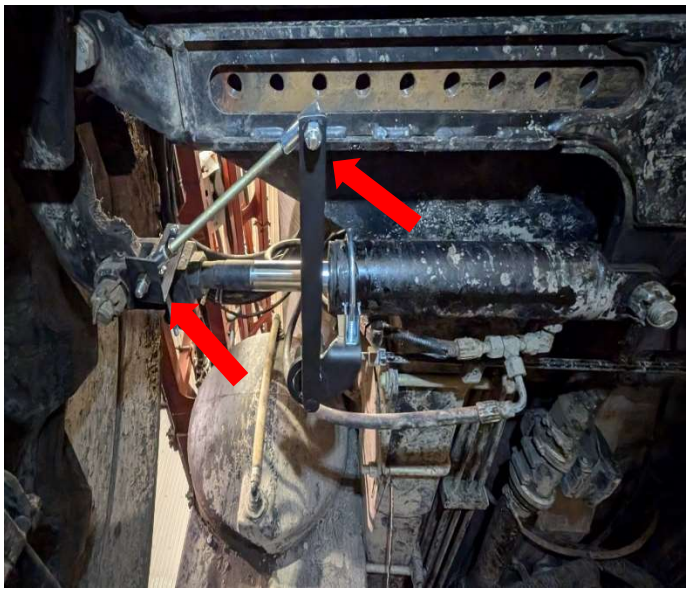
Use supplied bolts to install L bracket on outside end of the right-side steering cylinder. Place the L bracket on the front.

Place the clamp on the steering cylinder tube, then install the sensor housing bracket on the back side.



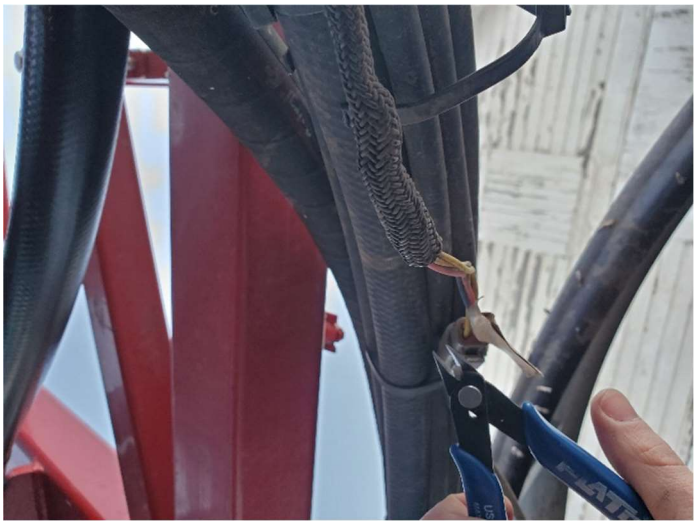
Install threaded rod with ball joints to connect both brackets.

For best accuracy: Have wheels pointing straight, and adjust ready rod to have sensor arm pointing straight forward.



Locate the 4-pin DTM plug which connect to the CNH steering sensor. Disconnect the plug.

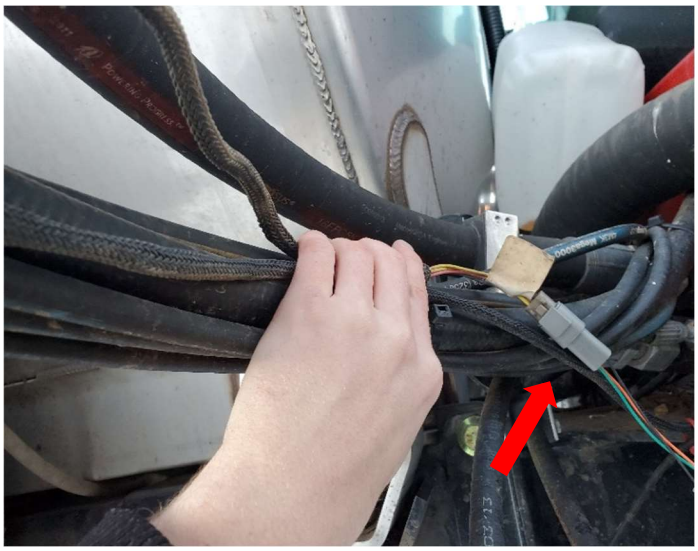
Cut the zip ties in order to bring the female plug closer to the chassis of the machine.



Bring the plug closer to the chassis of the machine and replace the cut zip ties.

Then connect the wheel angle sensor connector to the 4-pin DTM female.

The other end of the adapter will connect directly to the sensor.

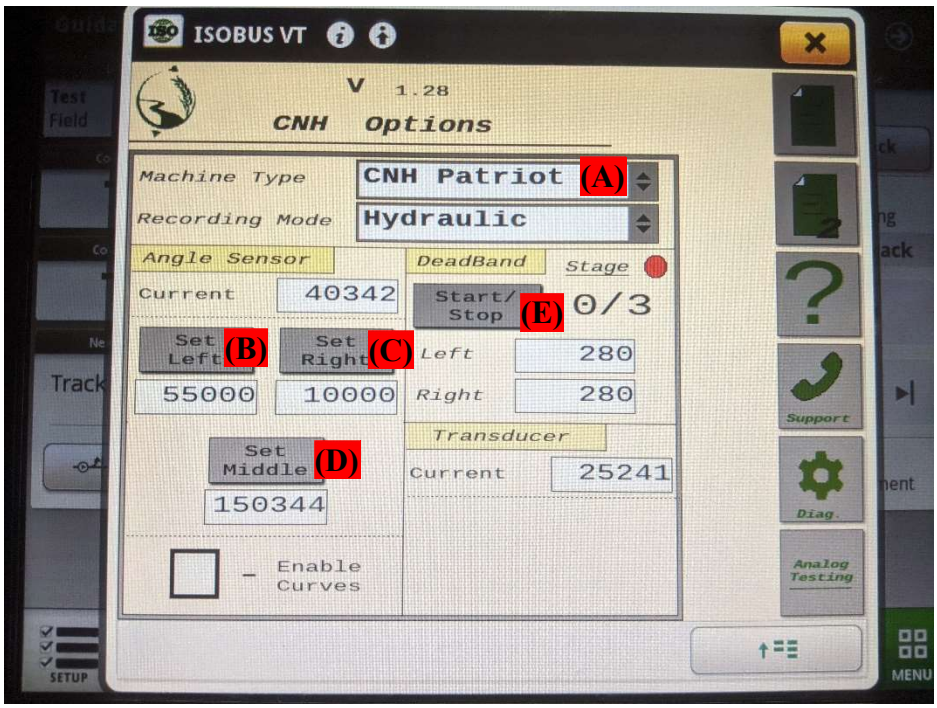


Step 4: Once the receiver is installed, move on to the Bridge User Manual for instructions on how to access the ISO app

NOTE: If you do not have the Bridge User Manual it can be found at agragps.com

Step 5: Calibration

Once completed you can see the range of the wheel angle sensor in the AgraGPS ISO app in the JD display.



(A)Select "CNH Titan" in the Machine Type section.

You must calibrate the left and right values, as well as the center.

The maximum value to the left should be 65535, and the minimum to the right will be zero. The sensor should not display either the maximum or minimum if mounted correctly.

(B)To calibrate, turn the wheels all the way to the left and press “Set Left”, it will save the value in the

box next to the button.

(C)Turn the wheels all the way to the right, and press “Set Right”

(D)Then center the wheels and press “Set Middle”

Next the dead band of the valve must be set.

(E)To automatically calibrate, center the wheels and press “Start”. The automatic calibration procedure can take up to 10 minutes at times.