

INSTALLATION MANUAL

Agra-GPS CNH-JD Bridge for a Quadtrac (2012-2016, no canbus steering)



Version 1.0
Revision A
March 2020



Contact information
Agra-GPS Ltd.
Box 2585
Stony Plain, AB
T7Z 1X9
CANADA
001 780 990 4052 Phone
www.agra-gps.com

Release Notice

This is the April 2018 release (Revision A) of the CNH-JD Bridge for CNH Quadtrac with canbus steering installation manual.

Disclaimer

While every effort has been made to ensure the accuracy of this document, Agra-GPS Ltd assumes no responsibility for omissions and errors. Nor is any liability assumed for damages resulting from the use of information contained herein. Agra-GPS Ltd shall not be responsible or liable for incidental or consequential damages or a loss of anticipated benefits or profits, work stoppage or loss, or impairment of data arising out of the use, or inability to use, this system or any of its components.

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 a Case or New Holland Quadtrac (canbus autosteer ready) and a John Deere display (1800, 2600, 2630 or 4640). This allows a JD display to create maps in the John Deere format and also 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.

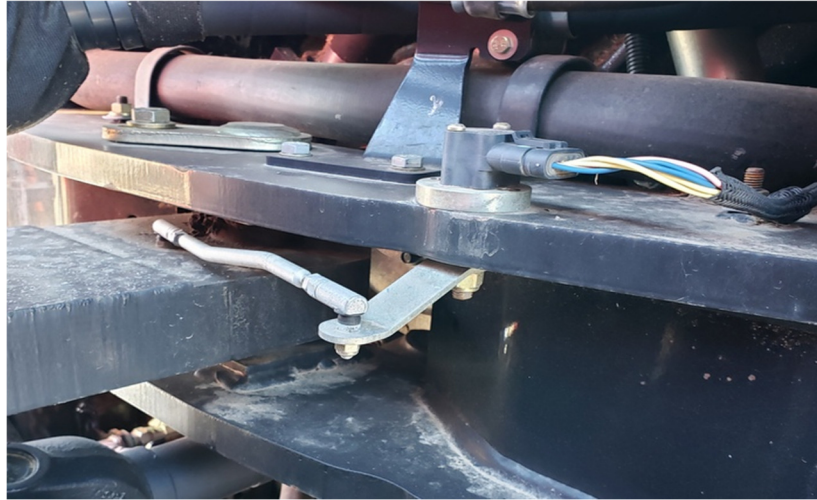
NOTICE

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.

Installation of the CNH-JD Bridge

Note: If you need to verify that your Case Quadtrac is a „canbus“ steered machine, please check for a build-in wheel angle sensor at the articulation point! If the wheel angle sensor shown below is installed on your machine, your quadtrac is canbus steered!

IF you have this wheel angle sensor, please use our kit for canbus steered quadtracs!! This is not the correct manual!



Step 1: Mounting the CNH-JD Bridge

The CNH-JD Bridge is installed in the right back corner of the cab.

The plastic cover can be lifted enough to access the required connectors and there is space for the Bridge box at the bottom.



Open the side door and then remove the top 2 screws for round pipe mount.



Now remove the door latch which still holds the plastic cover in its place.
Once the door latch is off, carefully lift the plastic from the cab pillar.



Find the connector labelled C602 behind the panel. Open it and insert the 12-pin DTM connectors of the provided AgraGPS harness.

Note: It is sometimes also called the display connector! If you do not have a display you may only see one open connector. If a display cable exists you have to open the connection and insert the AgraGPS connectors.



You also find 2 * 4pin DT connector with an ISO label at about the same spot. Open it and insert the 2 * 4-pin connectors of the AgraGPS harness here.



Run the cable to the bottom to connect to the CNH-JD Bridge.
There is enough space behind the plastic panel to hide the cable.



Depending on where you mount your JD display, you can run the display cable out at the middle opening or under the floor mat.

The 12-pin deutsch connectors fits through that opening and should be coming out at the bottom of the plastic panel together with the first cable from the connector.



Once you have routed both cables to the bottom, connect them with the Bridge.

The adapter connected to the black 12-pin deutsch of the bridge must be routed to the passenger seat location. The 40pin and 24 pin connector for the Case nav controller can be found here.

If you have a nav controller, it must be disconnected!

Especially if you have a navcontroller installed, the easiest way to gain access is by removing the plastic cover of the passenger seat.

Flip the seat over, remove the plastic storage compartment.

Remove the 2 bolts holding the seat cushion, then remove 2 nuts under the rubber floor mat. Now carefully remove the plastic "bolts" on the cover facing the driver seat.

Lift the plastic cover and you should see the nav controller at the bottom. (see picture).

Unbolt the 40 and 24 pin connectors.





Use the red deutsch removal tool, to remove a number of connections on the 24-pin deutsch connector and re-pin them to the 40-pin deutsch on the same cable.

From the 24pin, move the following cables:

From

pin 3 to pin 7 of the 40-pin deutsch

pin 4 to pin 16 of the 40-pin deutsch

Now connect the 40pin from the Bridge harness to the 40 pin of your tractor.

Finish the Bridge part of the install by placing the Bridge in the opening and routing the display cable to your JD display mount.



4640 installed at the top bar, cable coming from the opening in the back column.

Step 2: Mounting the JD receiver

The mounts for the JD display and receiver are NOT part of the CNH-JD Bridge.

The JD mount can easily be bolted to the metal bracket provided on the roof of the CNH Quadtrac.

Using the short 12-pin adapter cable, the JD receiver is connected to the 12-pin deutsch in the CNH tractor roof.

DO NOT CONNECT THE John Deere GPS receiver without the adapter cable to the CNH roof outlet!!



Use the John Deere monitor as you do in a John Deere tractor, set an AB-line, activate "Steer ON", then use the build-in resume button to activate autosteer!

Note: If you have your forward/reverse level in the park position, you will not be able to engage. The John Deere monitor will show a "Road switch" message!

On a New Holland T9 the resume button is located in the joystick, however it works the same.



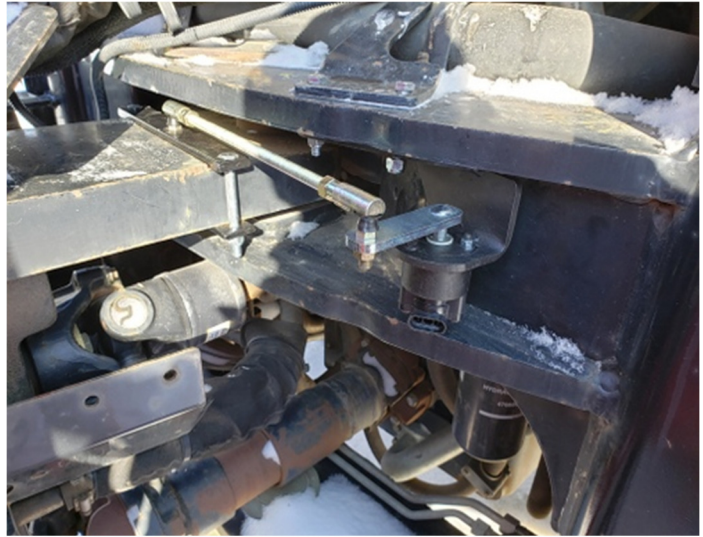
Step 3: Wheel angle sensor installation

The machine requires the installation of a wheel angle sensor.

The wheel angle sensor is mounted at the articulation point. For an easier install, turn the tractor steering all the way left. Turn the tractor OFF!

Access the articulation area from the right. Use 3/8" bolts to mount the bracket to the top part of the frame (see picture).

Note: Some models have a hyd. hose holder on the top, others do not.



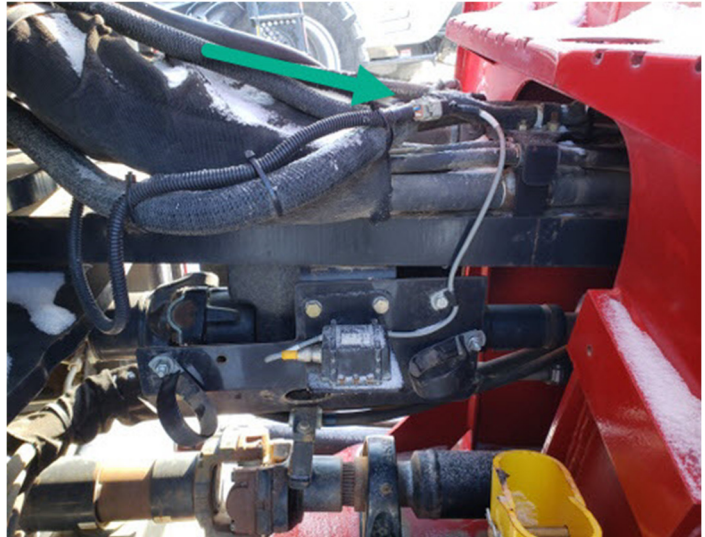
Mount the 2 flat bars as close as possible to the turning point. The closest point without risking damage to the wheel angle assembly is about 40 mm measured from the turning bolt (see picture).

Test that the wheel angle assembly is not touching when the tractor moves to its full left or full right position!!

Mount the bolt into the sensor assembly part AFTER checking the travel of the threaded rod!
Check for full left that the threaded rod is not too short and fits nicely into the sensor assembly. Sensor assembly arm should have a slight angle towards the back of the tractor, so to not sit perfectly straight. Do a full right and once again check that the threaded rod fit into the sensor assembly without overextending the arm. The tractor only does about 70 degrees, the sensor can handle 180 degrees, so lots of freedom on the sensor itself, just make sure the mechanical arms are not pulled or pushed beyond the limits!
Normal length of threaded in rod from ball



point to ball point is about 12" or 30 cm.



Route the wheel angle sensor cable from the potentiometer to the 4-pin DTM which is normally used for the CNH sensor. (see picture)

Open the 4pin DTM and connect to the AgraGPS wheel angle sensor cable. Make sure you secure the cabling so that the cable does not get pinched during articulation.

Once completed you can see the range of the wheel angle sensor in the AgraGPS ISO app in the JD display. You must calibrate the left and right values. Should the highest value be above 65500, please adjust the threaded rod to not exceed this value!

Make sure you select "Articulated" in the machinetype section!

The left value should be higher than the right and values should be in the thousands. Should you see no significant changes when you move the wheel or values below 500, your connection to the wheel angle sensor is incorrect.

Once values are good, click "Set left" when your tractor is fully moved to the left, "Set right" when it is to the right.

The dead band calibration can be typed in manually, but the automatic is recommended. Simply start it and do not touch the steering wheel. It can take a few minutes, but in the end you should see values in the deadband calibration.