

INSTALLATION MANUAL

Agra-GPS CNH-JD R-15 Bridge for 2012-2019 row crop tractors (analog steer)



MAKE: Case IH or New Holland
MODEL: Magnum Tier 4B - 180, 200, 220, 240, 250, 280, 310, 340, and 380 or T8.380
YEAR: 2012-2019

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Release Notice

This is the May 2024 release (Revision B) of the CNH-JD R-15 Bridge for CNH row crop tractors (2012-2019) installation manual.

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 a Case or New Holland row crop tractor (2012-2019) (autosteer ready) and a John Deere display (1800, 2600, 2630 or 4640, 4240). This allows a JD display to create maps in the John Deere format and also provides JD 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 -R-15 Bridge

Park the machine where the ground is level, dry and clean. Leave the machine OFF during the installation.

Follow safety practices and read the instructions carefully as you proceed in the install process.

The CNH-JD-R-15 kit consists of:

- The JD-Bridge itself
- A cable to the JD GPS from the portA and portB roof connectors of the machine
- An adapter cable for the ISO communication and power (brown 12-pin and grey 3-pin connector)
- An adapter from the JD-Bridge to the JD Monitor
- An adapter for valve, operator override etc. (black 12-pin connector)



Step 1: Open the control panel

Open the control panel on the right side and find the brown 12-pin DTM connector and the grey 3-pin connector.



The CNH-JD Bridge R-15 connects to the brown connector for canbus and ISO communications. It also connects to the grey 3-pin for power supply.

Use the short adapter to connect the brown and grey connectors to the Bridge.

Note:

The Bridge itself can be placed behind that control panel once the install is complete.



Depending on the cab model, your nav controller connections may be on the outside below the cab rear window (top photo) under the plastic panel or inside the cab under a metal plate (bottom photo). At the back of the cab, remove the black metal cover so you can access the wiring behind.

Locate the 40-pin deutsch and 24-pin deutsch which may be connected to a nav controller (if equipped). Disconnect both from the nav controller.

Note: The nav controller is not required and can be removed if it is installed.



(With the steer controller exposed)



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



Use the 2nd adapter which has the black 40-pin deutsch connector, and the long cable to the 2-pin deutsch (DT).

Connect the black 40-pin deutsch of the adapter to the 40-pin from the machine that was modified in the last step.

Run the 2-pin deutsch under the cab to the front left side of the tractor.

The valve sits right in the front of the cab and may be difficult to reach. Lift the tractor hood to allow for better access.

Remove the existing 2-pin connector from the valve block and connect the 2-pin from the adapter. Secure the cable away from any heat source and moving parts. Use plastic cable ties.



Now take the 3rd adapter and connect the portA (X-295) + portB (X-433A) connectors from the machine to the John Deere GPS receiver (here a SF6000). The receiver must be mounted at the front of the roof!

The adapter cables should be marked with an A or B label to match the machine ports. If they are not marked:

The 12-pin deutsch that has the pins:

pin 1 – Yellow

pin 12 – Green

Connects to portB of the machine

The other 12-pin deutsch connects to portA

Also run the display adapter (4th adapter) from the bridge to the John Deere display (here a 4640).



Reinstall covers on the tractor and secure all loose cables away from moving parts and heat sources.

Important – The steer enable switch must be active in order to begin autosteering. To make this switch active, move the switch to the downwards position from the upwards position (So the switch is not lit up) AFTER the machine has already been started.

Step 6: ISO Application

The CNH bridge comes with an ISO application that will be loaded onto the John Deere monitor. The app should automatically store itself on the monitor after the first few minutes of the initial startup. On subsequent runs the app will load itself from memory as soon as possible. The CNH app includes:

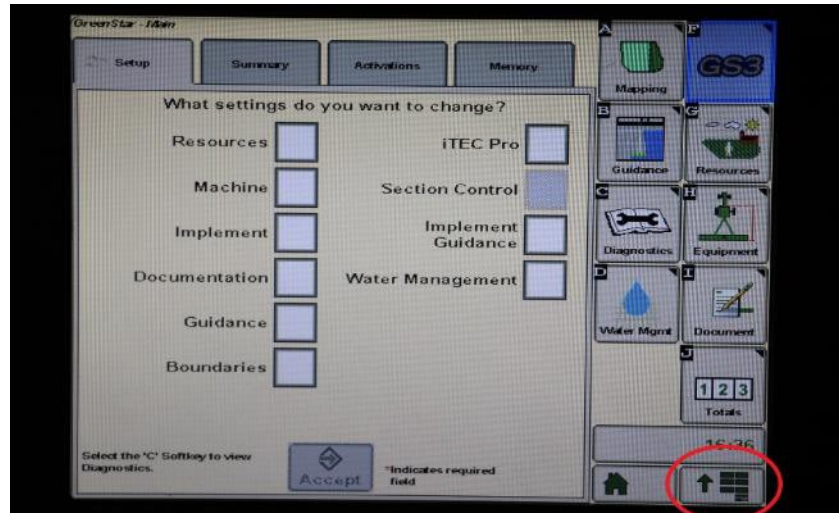
- Calibration
- Option to change work recording mode
- Option to change the machine type
- Optional autosteer engage button & status
- Help and Support page
- Diagnostic Page
- Advanced testing page

Where to find the CNH ISO application on the John Deere monitor:

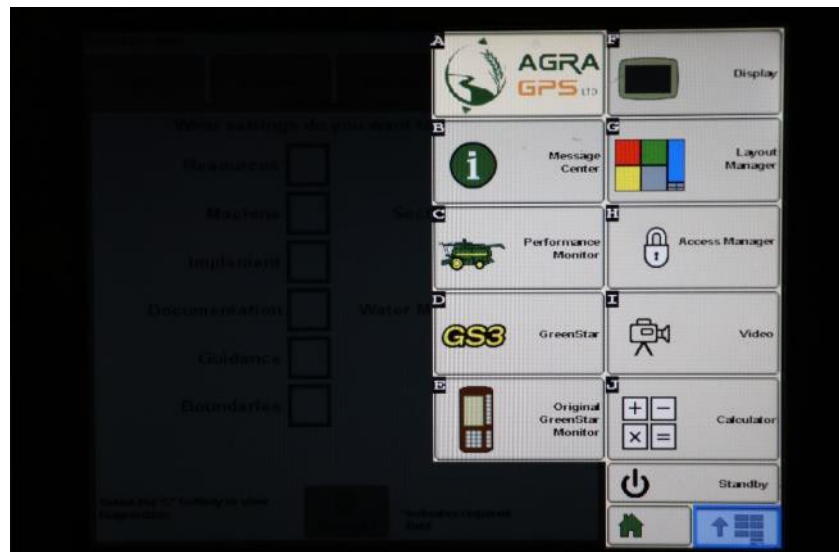
- On a John Deere 4640 the application will be loaded in the ISOBus VT section on the main page of the display.



- On John Deere 1800, 2600, 2630 the application will be shown in the side menu of the John Deere display. The side menu is opened by clicking the button on the bottom right of the display.



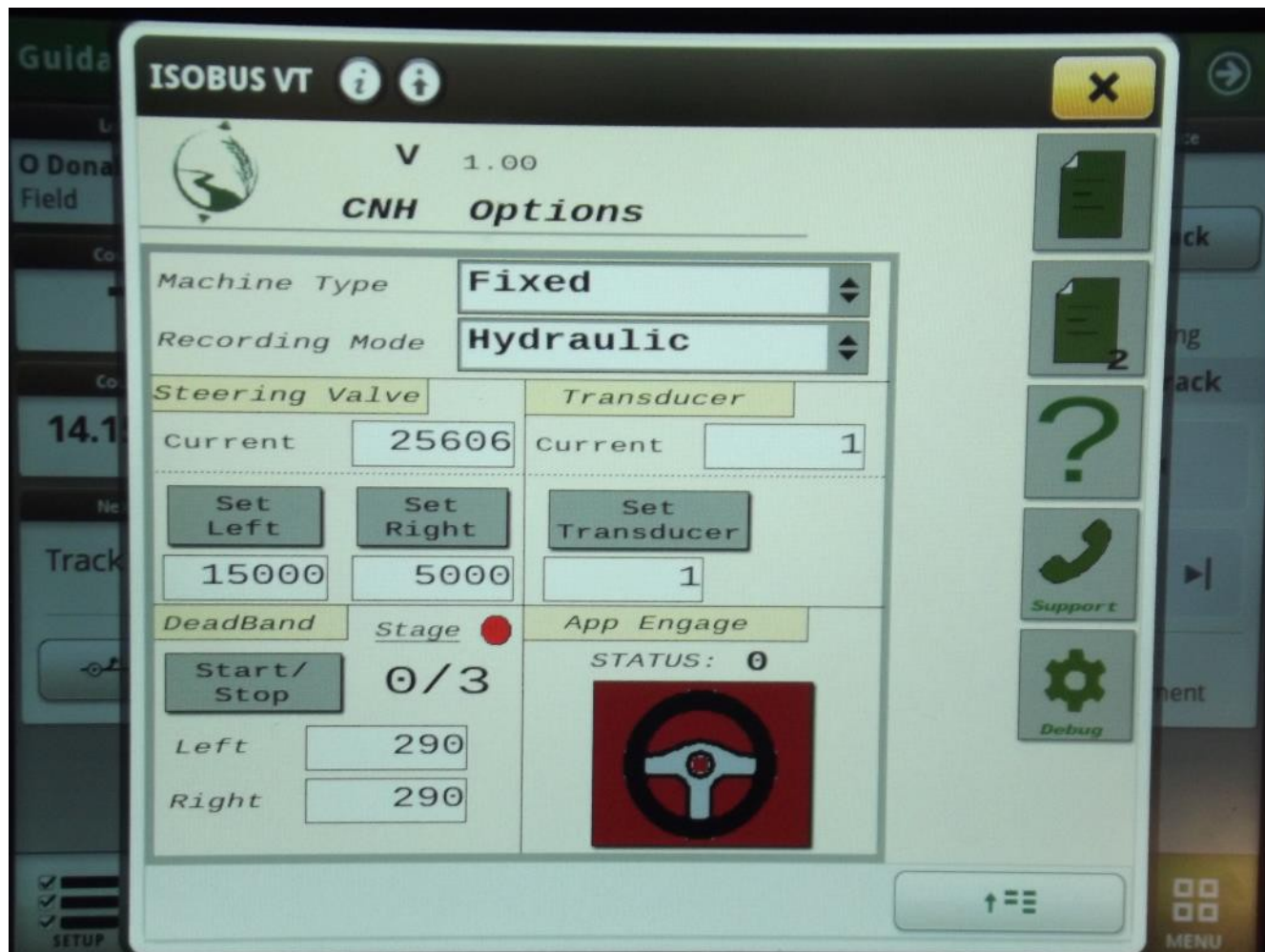
- **NOTE:** John Deere 1800 and 2600 monitors do not show a loading bar for ISO applications, while 2630 and 4640 monitors do.



If the ISO application is not loaded:

- Try clearing the monitor's memory. On 2630 monitors this can be done in the Message Center in the side menu. Go to the Cleanup tab, check controllers, then Begin Cleanup. On 4640 monitors this can be done in the info page of the ISOBus VT. Navigate to the ISOBus VT window and click the info button at the top of the page, then press Clean Up ISO Bus VT.
- Do a hard reset of the John Deere monitor (Unplug it, then plug it back in).
- Do a full restart of the machine. Remember the app may take a few minutes to load.

Step 7a: Calibration (CNH) - ISOApp



Note: Newer versions of the AgraGPS ISO app may have slight differences in layout and functionality.

Section – Steering Valve: Allows the user to set the left and right max of the CNH machine. To calibrate, steer as far left as possible and press, “Set Left”. Then, steer as far right as possible and press, “Set Right”. **For AgraGPS ISO app version V2.00+ Only**, Ensure that the recorded "Right" value is higher than the "Left" value, and that the two values are in the thousands. If the values are reversed, the setting "Wheel Angle Reversal" can be toggled within the AgraGPS ISOApp settings page.

Section – Transducer: Allows the user to set the steering wheel movement detection. While the machine is running, ensure the wheel angle is straight and the machine is in park. Then, press, “Set Transducer”.

Section – Deadband: Allows the user to calibrate the deadband of the valves. Ensure the perimeter around the machine is clear and press the Start/Stop button to begin. An indicator will blink yellow while calibration is in progress and will take approximately five minutes.