

INSTALLATION MANUAL

Agra-GPS Versatile (Nemesis) - JD Bridge



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Revision A
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Release Notice

This is the April 2022 release (Revision A) of the Versatile(Nemesis)-JD Bridge 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 Versatile(Nemesis)-JD Bridge IF YOU DISAGREE WITH THE
DISCLAIMER.**

Important Safety Information

Read this manual and the operation and safety instructions carefully before installing the Versatile(Nemesis)-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 Versatile(Nemesis)-JD Bridge, observe the following safety measures:

- Be alert and away of surroundings.
- Do not operate the Versatile(Nemesis)-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 Versatile(Nemesis)-JD Bridge system is engaged.
- Determine and remain a safe working distance from other individuals. The operator is responsible for disabling the Versatile(Nemesis)-JD Bridge system when a safe working distance has been diminished.
- Ensure the Versatile(Nemesis)-JD Bridge is disabled prior to starting any maintenance work on the machine or parts of the Versatile(Nemesis)-JD Bridge system.
- Follow all safety instructions from the Versatile system as well as the JD system!
- The Versatile(Nemesis)-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 Versatile(Nemesis)-JD Bridge. This product is designed to bridge the communication between a Versatile(Nemesis) tractor (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 Versatile(Nemesis)-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 Versatile 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 Versatile(Nemesis)-JD Bridge.

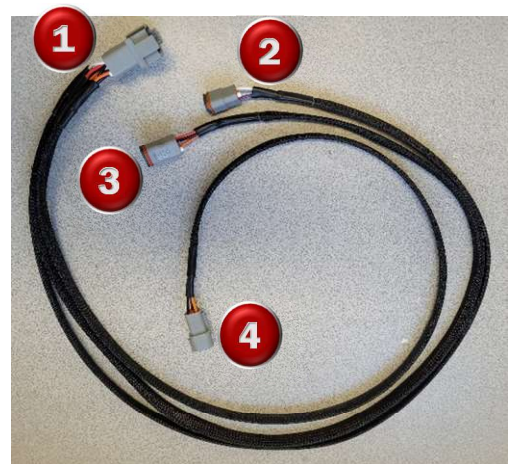
Parts Overview

A. Versatile(Nemesis)-JD Bridge



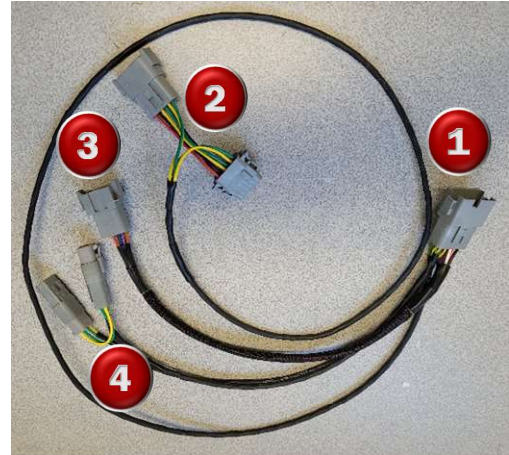
B. Under-Cab Cable

1. C136 – Auto Steer connector
2. Connected to transducer on the steering valve
3. Connected to hydraulic steering valve
4. C198 – Steering angle sensor



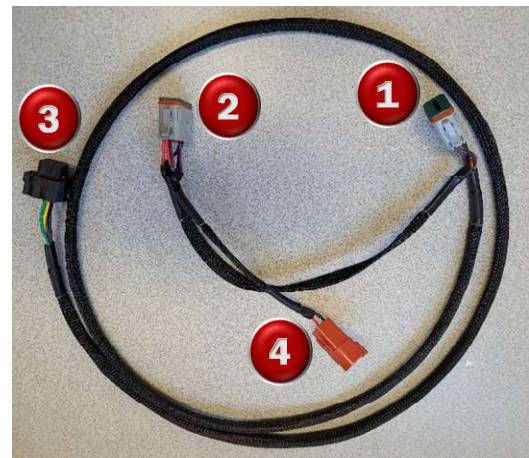
C. Machine Bus Cable – inside cab

- 1. Connected to Bridge
- 2. C434A/B
- 3. C430
- 4. C490A/B (iso integration)



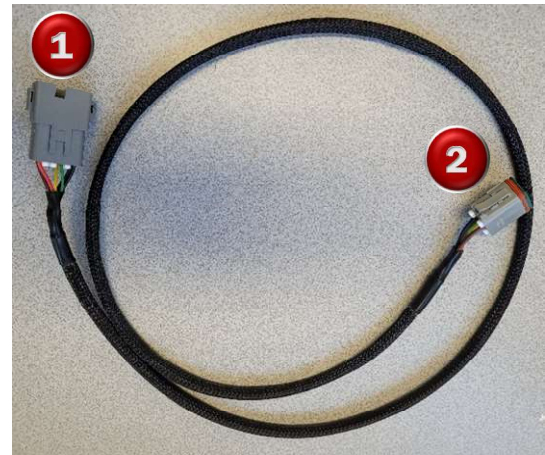
D. ISO Bus Cable – connects to JD monitor

- 1. Connected to Bridge
- 2. C901 (to roof)
- 3. JD monitor connector
- 4. C482 (power supply)



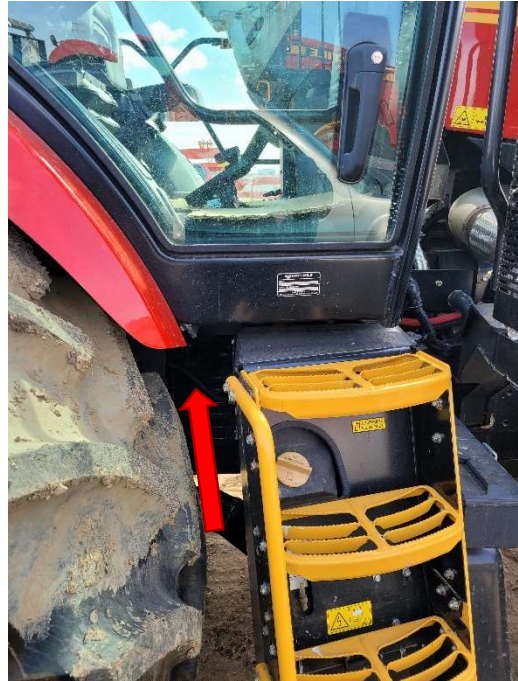
E. Receiver Cable

- 1. JD GPS receiver globe connector
- 2. C903 (901 pass through)



Step 1: Outside the cab

Locate the existing hydraulic steering control valve, underneath the cab (right side).

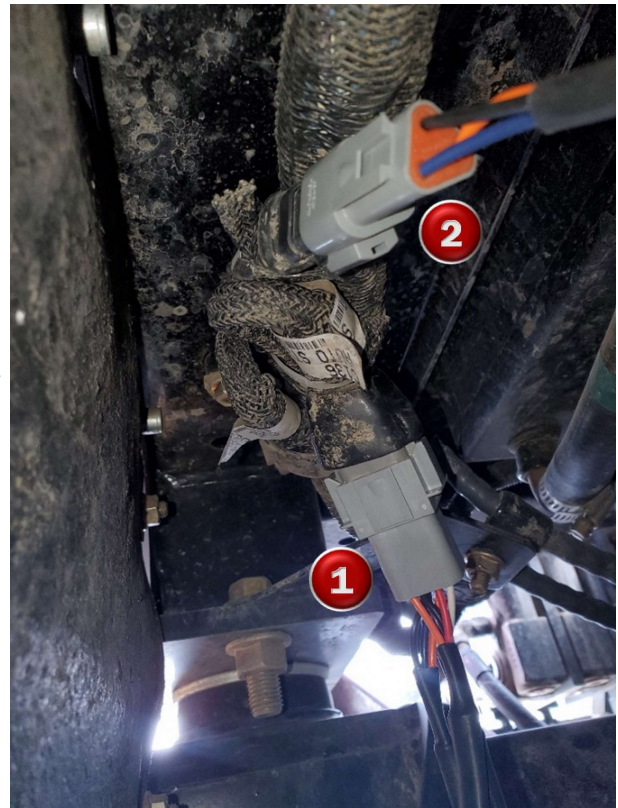


(1) Find the 8-pin deutsch connector under the cab, labelled C136 Auto Steer. It is located under the back of the cab (right hand side).

Remove the plug cover and connect the "Under-Cab Cable" here.

(2) Find the 3-pin connector for the wheel angle sensor. It is located near the 8-pin connector, extending from the same harness.

Remove the plug cover and insert the 3 pin connector until it "clicks".



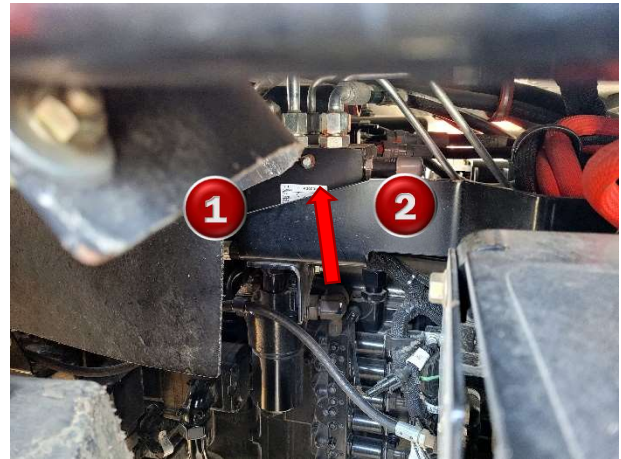
View facing towards back

On the hydraulic valve, locate the 4-pin valve connection and the 3-pin transducer connection.

Connect "Under-Cab Cable" to receptacles for valve activation (1) and pressure transducer (2).

Once all connections are made, secure the cable with cable ties so it cannot be damaged.

NOTE: If the tractor had a Trimble or Outback steering system installed, the transducer was changed and must be changed back to the factory transducer sensor: 422-0000-086 Raven XDCR Pressure Transducer 0-3000 PSI



Mount the JD GPS Receiver

Please contact Agra-GPS Ltd. for mount options.

The JD GPS receiver must be connected to the 12-pin deutsch connector labelled C903, located outside the cab roof near the rear right corner. To do this, use the receiver adapter cable provided.



Location of C903 pass-through cable connector.



Step 2: Inside the cab

First unhook the window piston, unbolt the right door grab bar, and then remove four plastic panels in order to access the cab connectors.



Mount the Agra-GPS Bridge

Mount the Bridge behind the operator seat, in the back compartment space (behind panel 4).



Machine Bus Cable Connections

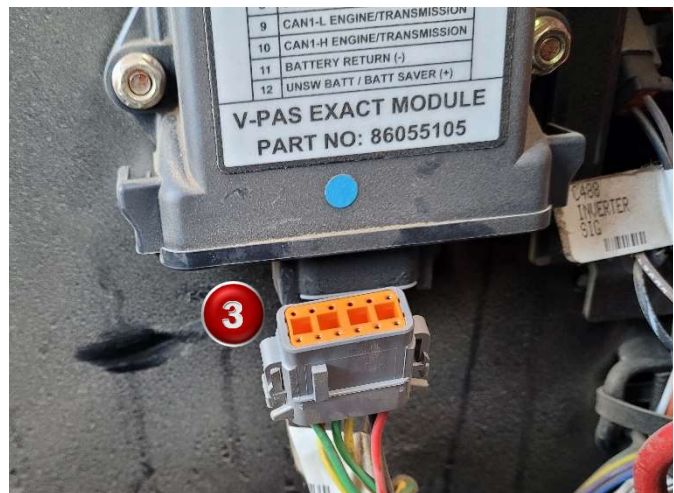
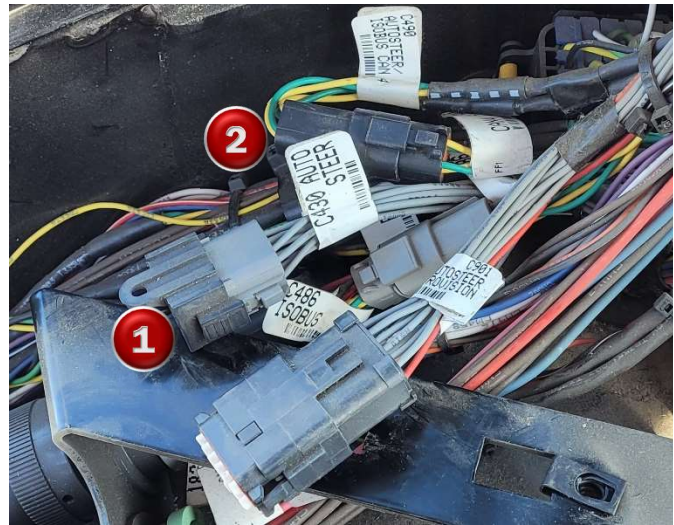
(1) Find the 8-pin deutsch connector inside the cab (labelled C430), and remove the plug cover.

Connect the "Machine Bus Cable" here.

Connect the other end of this cable to the Bridge.

(2) Open the ISOBUS CAN 4 connector (C490). Connect the new cable connectors tagged as C490A and C490B.

(3) This cable harness also connects to the C434 connector, which can be found on the V-PAS module behind the operator seat (left side). Disconnect it from the module, plug in C434A from the cable, and plug C434 into C434B.



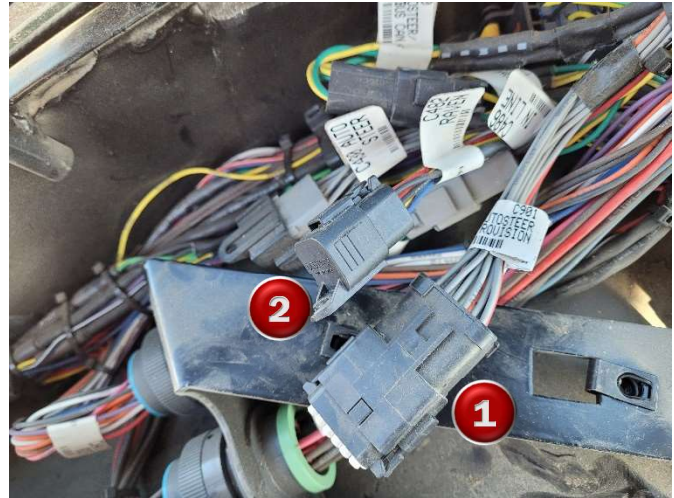
ISO Bus Cable Connections

(1) Find the 12-pin deutsch connector (labelled C901), and remove the plug cover.

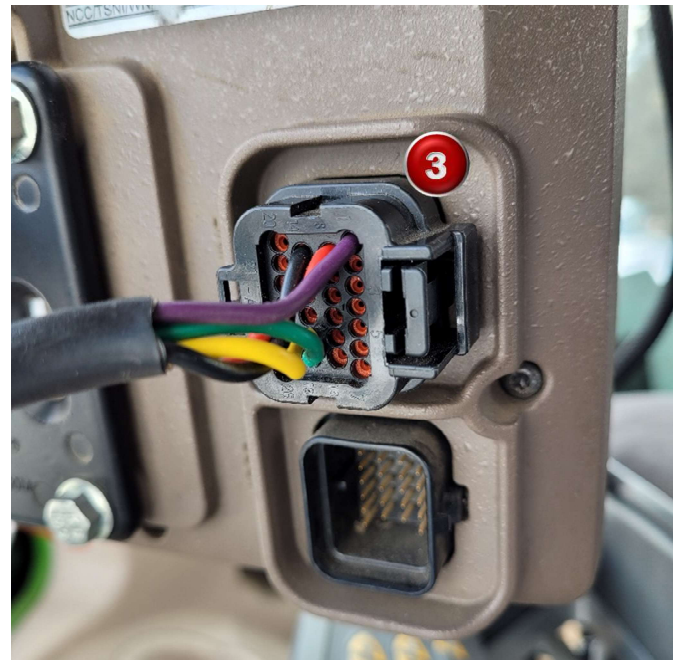
Connect the "ISO Bus Cable" here.

Connect the other end of this cable to the Bridge.

(2) Remove the plug cover from the connector labelled C482 (Raven) and connect the orange connector.



(3) Connect the "ISO Bus Cable" to the back of the John Deere monitor.



Step 3: Mounting the JD Display

The mounts for the JD display are NOT part of the Versatile(Nemesis)-JD Bridge, however they can either be ordered as an optional item from Agra-GPS or directly from RAM.

The JD-display may be mounted many different ways.

You may use the standard JD mounts or a RAM mount. RAM-270U + 2 * 1.5" balls (RAM-202U) + 4" double socket arm (RAM-201U). It fits JD displays 2600 and 2630.

Step 4: Setup

Powering the System

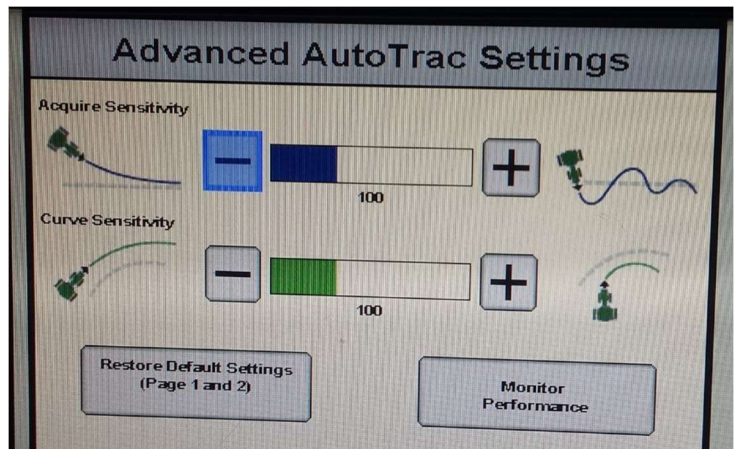
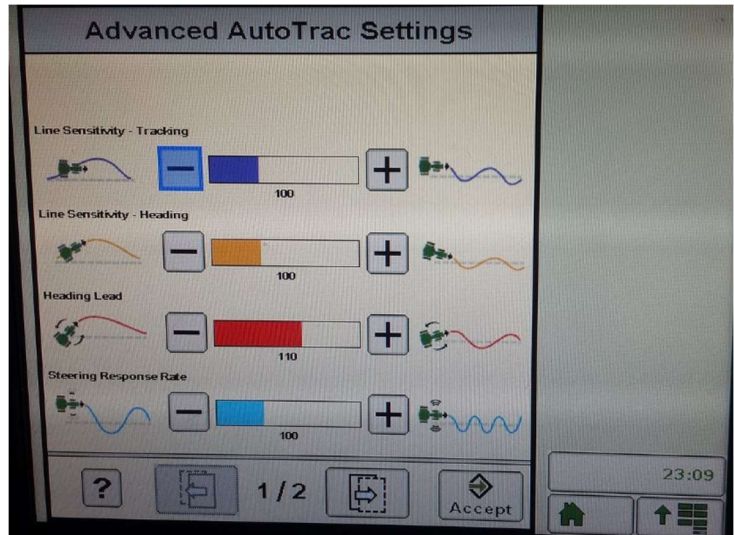
Power for the Versatile(Nemesis)-JD Bridge and associated components (JD GPS receiver and monitor) is provided by the overhead Auto Steer switch near the radio.

****NOTE**** Power is not switched by the key. If the system remains powered after the tractor is turned off for an extended time, it will drain the battery.



Adjusting steering

Using the JD display you may adjust your steering performance. Most machines will perform optimally with all JD settings at 100. If a change is required, find an open area where you can travel at target speed and adjust one parameter at a time until you are satisfied with the steering performance.



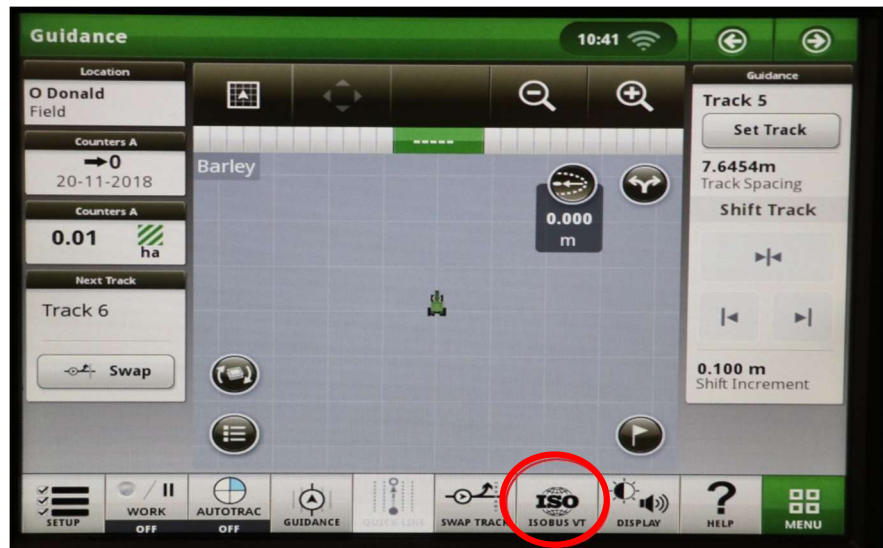
Step 5: ISO Application

The Versatile 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 Versatile app includes:

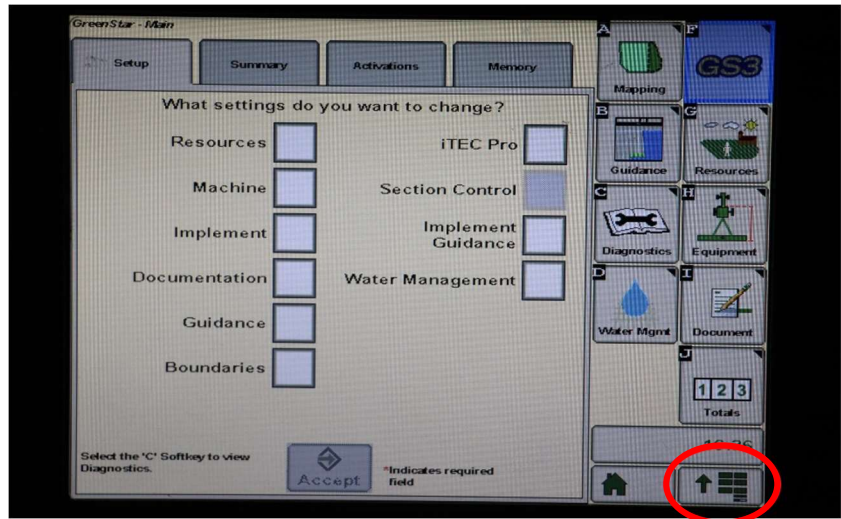
- Option to change work recording mode
- Option to change the machine type
- Help page
- Calibration

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

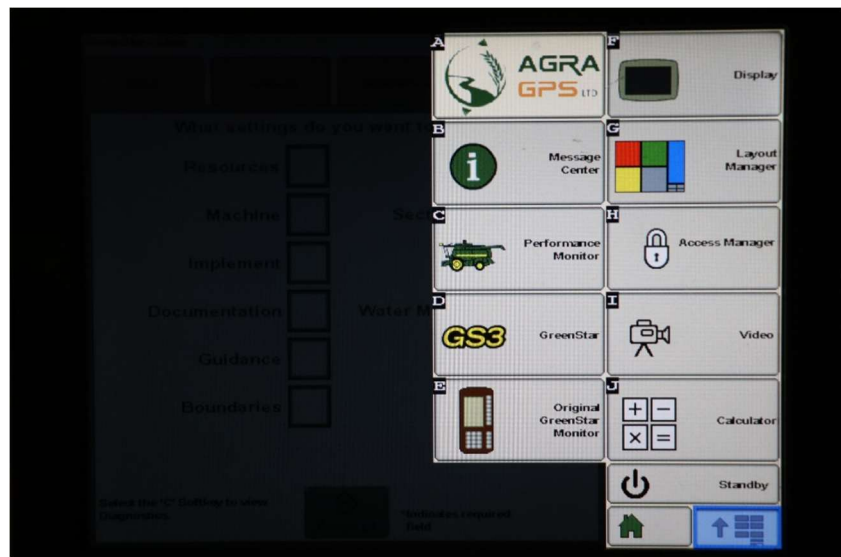
- On a John Deere 4640 the application will be loaded in the ISOBus VT section on the main page of the display.



- 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.



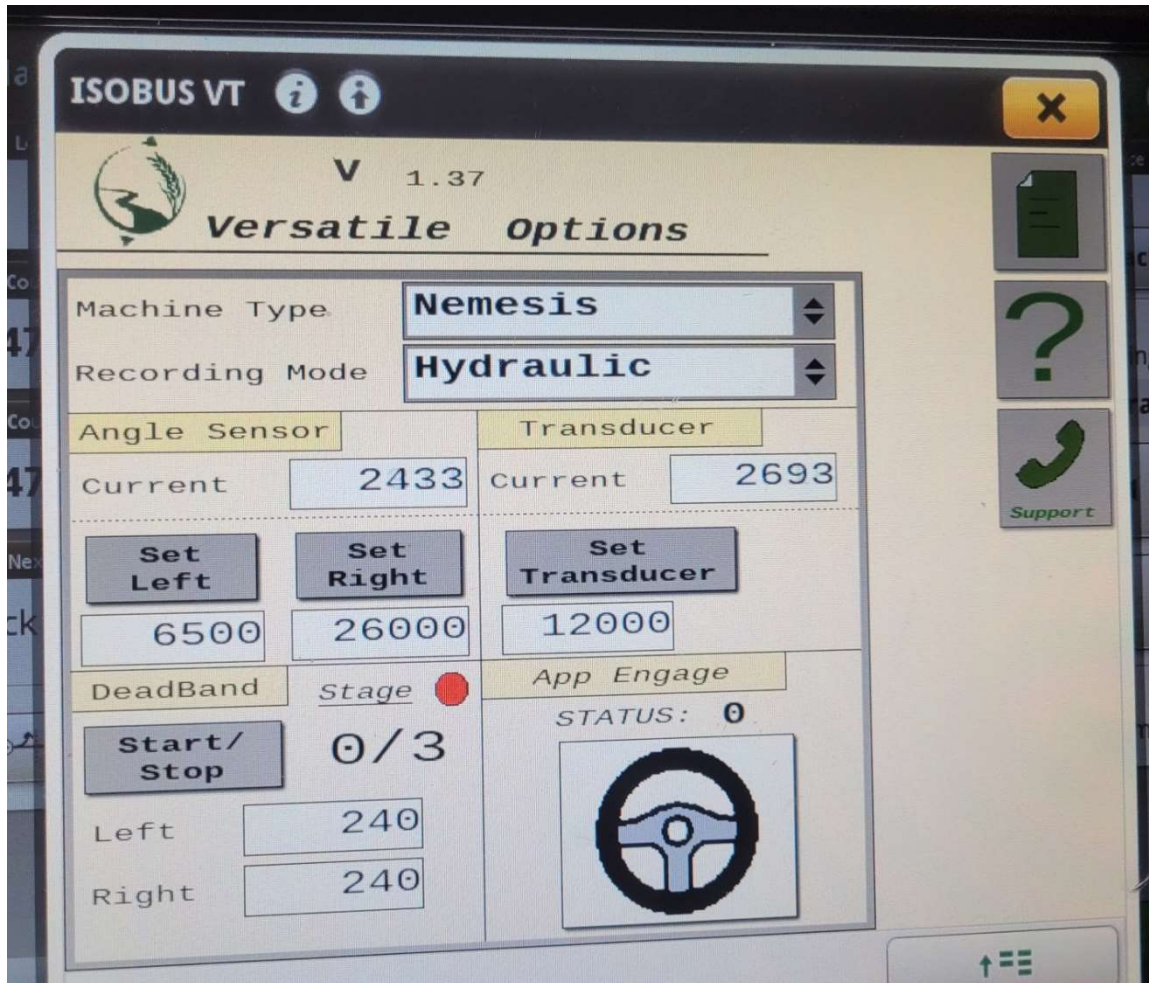
- **NOTE:** John Deere 1800 and 2600 monitors do not show a loading bar for ISO applications, while 2630 and 4640 monitors do.



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.

Calibration of the Versatile(Nemesis)-JD Bridge | ISOApp



Section – Steering Valve: Allows the user to set the left and right max of the Versatile machine. To calibrate, steer as far left as possible and press, “Set Left”. Then, steer as far right as possible and press, “Set Right”. The values should be in the thousands and have a good range between them e.g. 10000-20000 or even more. Should you see values in the hundreds, there is a connection issue and the voltage from the wheel angle sensor does not reach the Bridge.

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”. Again values should be in the thousands. A quick test for the transducer sees the “current” value jumping when the steering wheel is moved aggressively.

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.

Step 6: Operation

The button indicated can be used to engage or disengage auto-steering, if all other conditions are met.

Forcing the steering wheel will also disengage auto-steering.

