

INSTALLATION MANUAL

Agra-GPS JCB-JD Bridge for 4xxx and 8xxx Tractors



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Revision B
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Release Notice

This is the Feb 2020 release (Revision B) of the JCB-JD Bridge Installation Manual.

Disclaimer

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

Important Safety Information

Read this manual and the operation and safety instructions carefully before installing the JCB-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 JCB-JD Bridge, observe the following safety measures:

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

Installation of the JCB-JD Bridge

JCB Fastrac 4000

For JCB 4000 Agra-GPS delivers just the Bridge module itself without any wiring.

If you order a new 4000 series JCB, you may want to include the options:

130Txxx (regional / spec dependent) or 130T438 - Field Pro Pack (Includes GPS Ready Steering) or GPS ready & Rapid steer

130U407 - AGRA GPS READY (Harness & Roof bracket)

JCB Landpower offers a JCB Fastrac 4000s CANBUS GPS installation kit.

This must to be ordered separate from a JCB dealer.

JCB after market service kit p/n - 474/00873



There is also the option to order the Fastrac 4000 Agra-GPS ready by manufactory. Please see the JCB Fastrac compatibly document.

For the installation of the Bridge for JCB Fastrac 4000 models please see the JCB Fastrac 4000s CANBUS GPS installation manual.

JCB Fastrac 8000

For JCB 8000 Agra-GPS delivers a Bridge kit including an adapter to connect to the tractor and a harness to connect to the JD display and GPS receiver.

The followings steps will show you how to install the Agra-GPS bridge to a JCB 8000.

If you order a new JCB 8000 series, you may want to include the options:

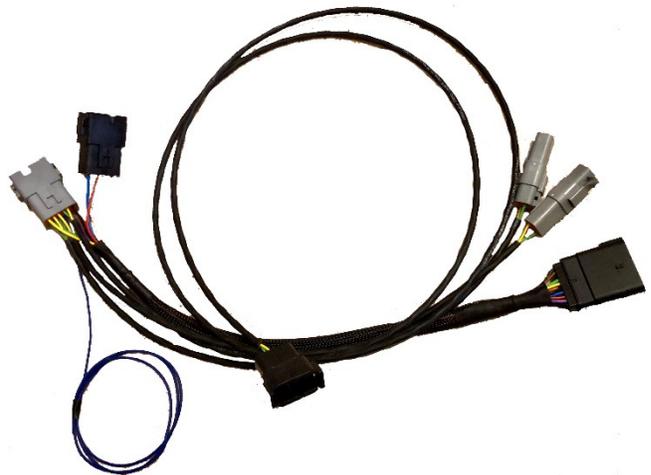
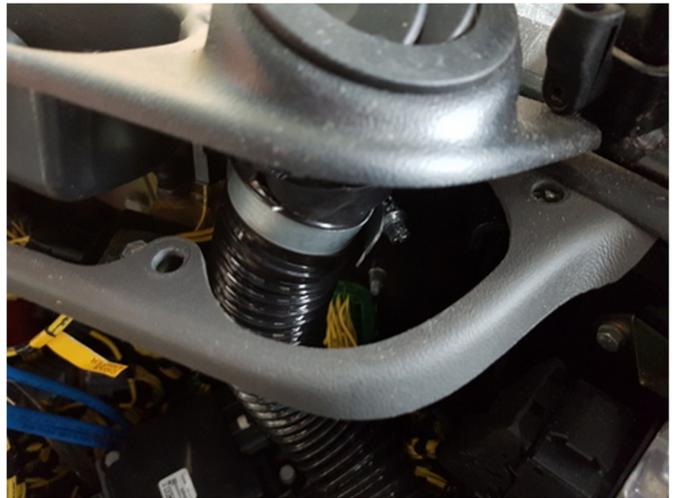
130G409 or 130G410 - GPS Ready Steering

130U807 - AGRA GPS READY (Harness & Roof bracket)

Step 1: Mounting the JCB-JD Bridge

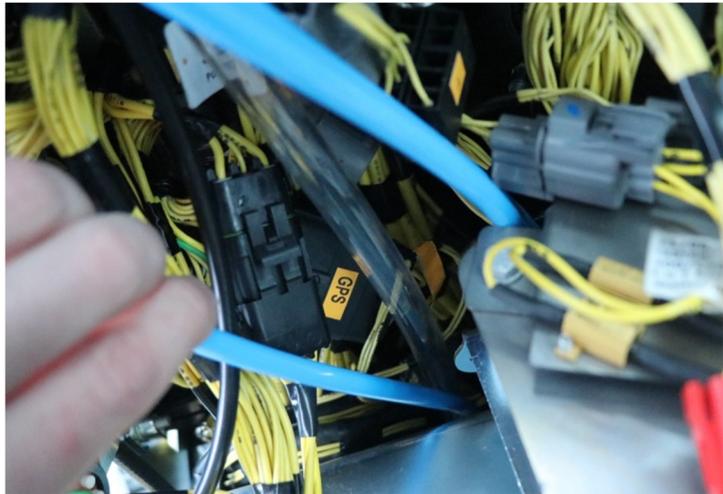
The JCB-JD Bridge is installed right of the driver seat.

Remove all screws from the lower part of the plastic panel. 2 extra screws are below the cigarette lighter plastic! Remove the top cover carefully as the air outlet is attached with a clamp.

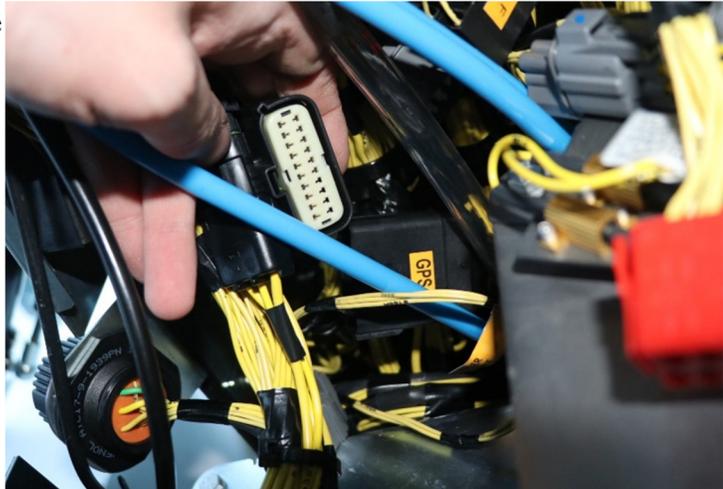


Connecting the adapter:

Locate the 20 pin “GPS” plug



Disconnect the “GPS” plug and connect the provided Agra-GPS bridge connector.



Remove the cover behind the seat.

Connect the provided Agra-GPS DTM04-12P plug and the black DTM06-12S connector.



Step 2: Mounting the JD Display

The mounts for the JD display are NOT part of the JCB-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)

<http://www.rammount.com/part/RAM-270U>



Here mounted above the JCB screen.



Step 3: Installing the antenna harness

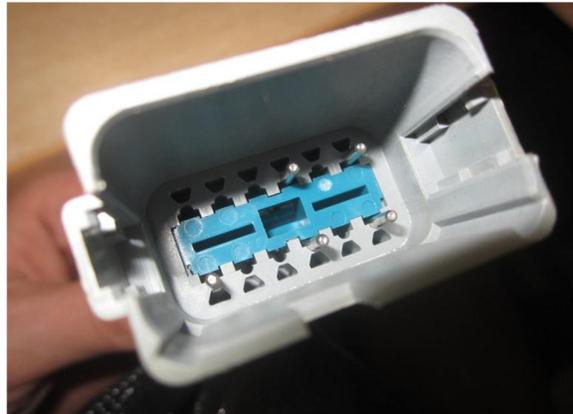
The harness that comes with the JCB Bridge can be routed up behind the “B” post moulding.



In order to route the cable it is necessary to remove the terminals from the 12-way deutsch connector.

Remove the internal lock – use a small screwdriver to flick this out. (or better a deutsch connector removal tool if available)

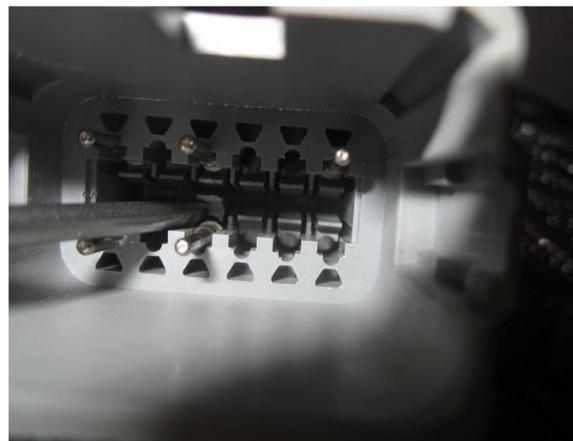
Make a note of the cables and the pin location!



Using a small screw driver hold back the terminal lock and the wire will pull out.

Remove all the wires from the connector to make it easier to fit through the grommet.

Putting electrical tape around the terminals will help routing this cable.



Remove the radio/blank and pull out the HVAC control panel. Also remove the main black plastic panel within the roof liner.



Locate the tractors radio antenna cable. Use the hole where this comes through and push the JD Antenna cable through this.



Locate the Front right-hand work light on the cab roof. Remove the whole work light assembly to gain access in the roof moulding. The JD antenna cable should be accessible.

Remove spare grommet (None US machines) and replace with 332/T6792. JD antenna should come through here.

Clip and tidy all cabling so no snagging will occur.

Once harness is through the grommet the connector can be refitted



Step 4: Mounting the JD Receiver

The JCB-JD Bridge does NOT include a standard JD-receiver bracket

JCB however has one available.

Order:

Antenna bracket

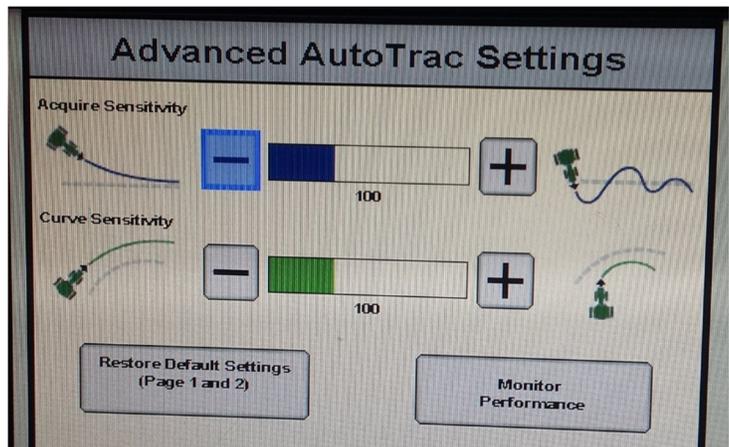
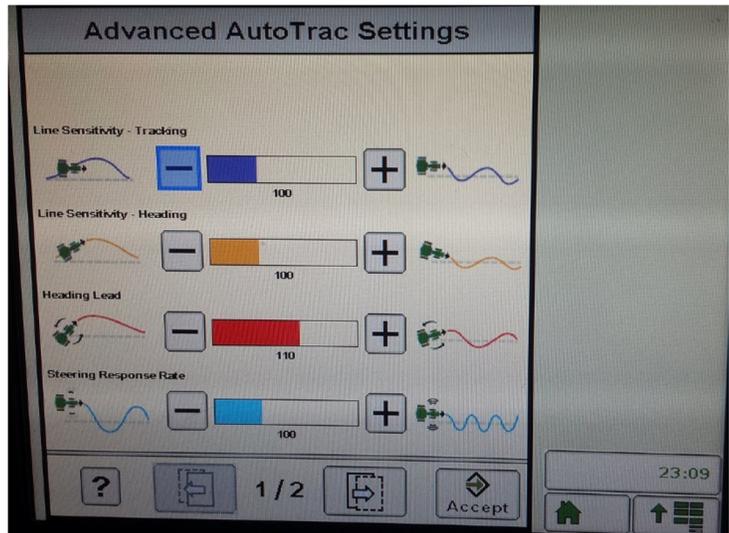
(400/H4801 and 400/E3645)

from JCB. Installation instructions come with the kit.



Step 5: 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.



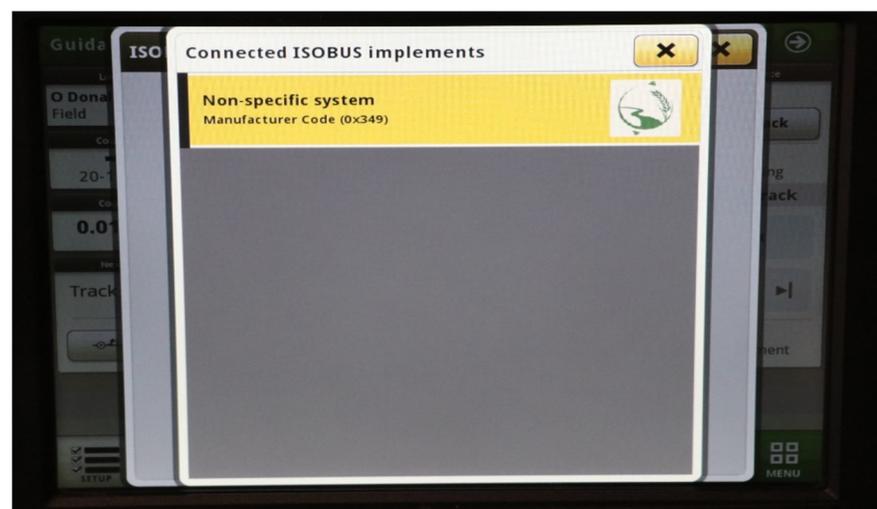
Step 6: ISO Application

The JCB 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 JCB app includes:

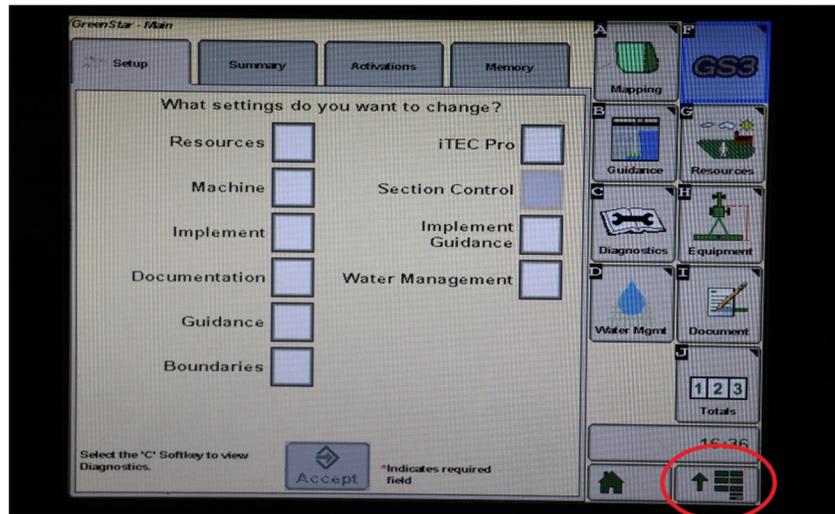
- Calibration
- Option to change work recording mode
- Option to change the machine type
- Optional autosteer engage button & status
- Help page

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

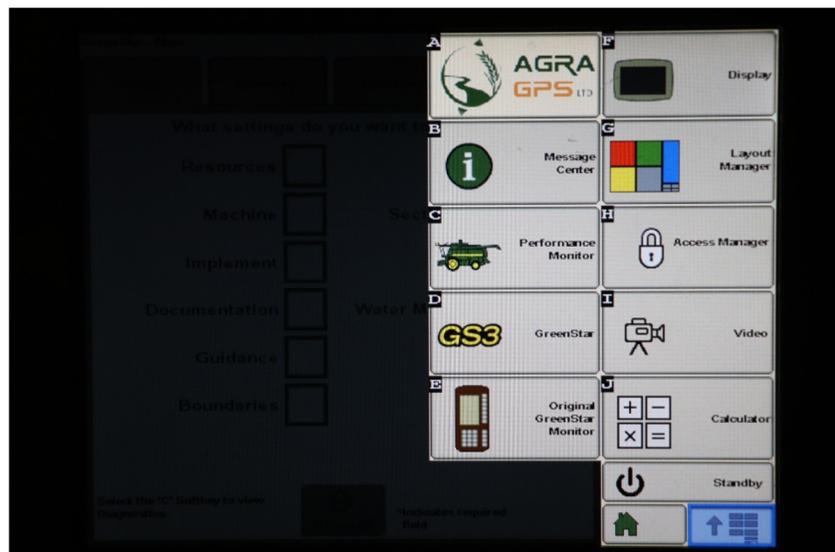
- On a John Deere 4640 the application will be loaded in the ISOBus VT section on the main page of the display.



- 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.

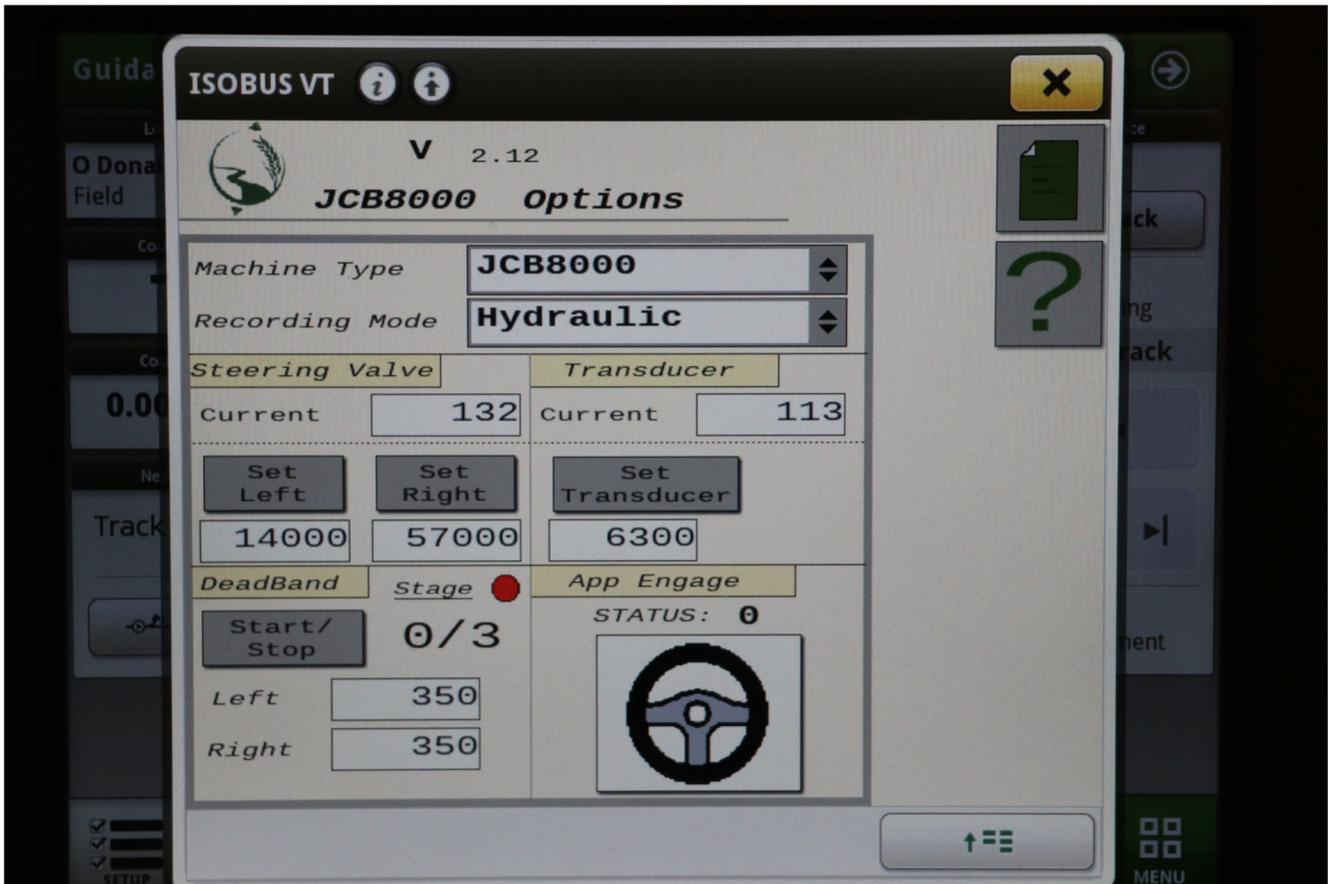


- **NOTE:** John Deere 1800 and 2600 monitors do not show a loading bar for ISO applications, while 2630 and 4640 monitors do.



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.
- If calibration is needed and the ISO application cannot be used, navigate to the next section of this document.

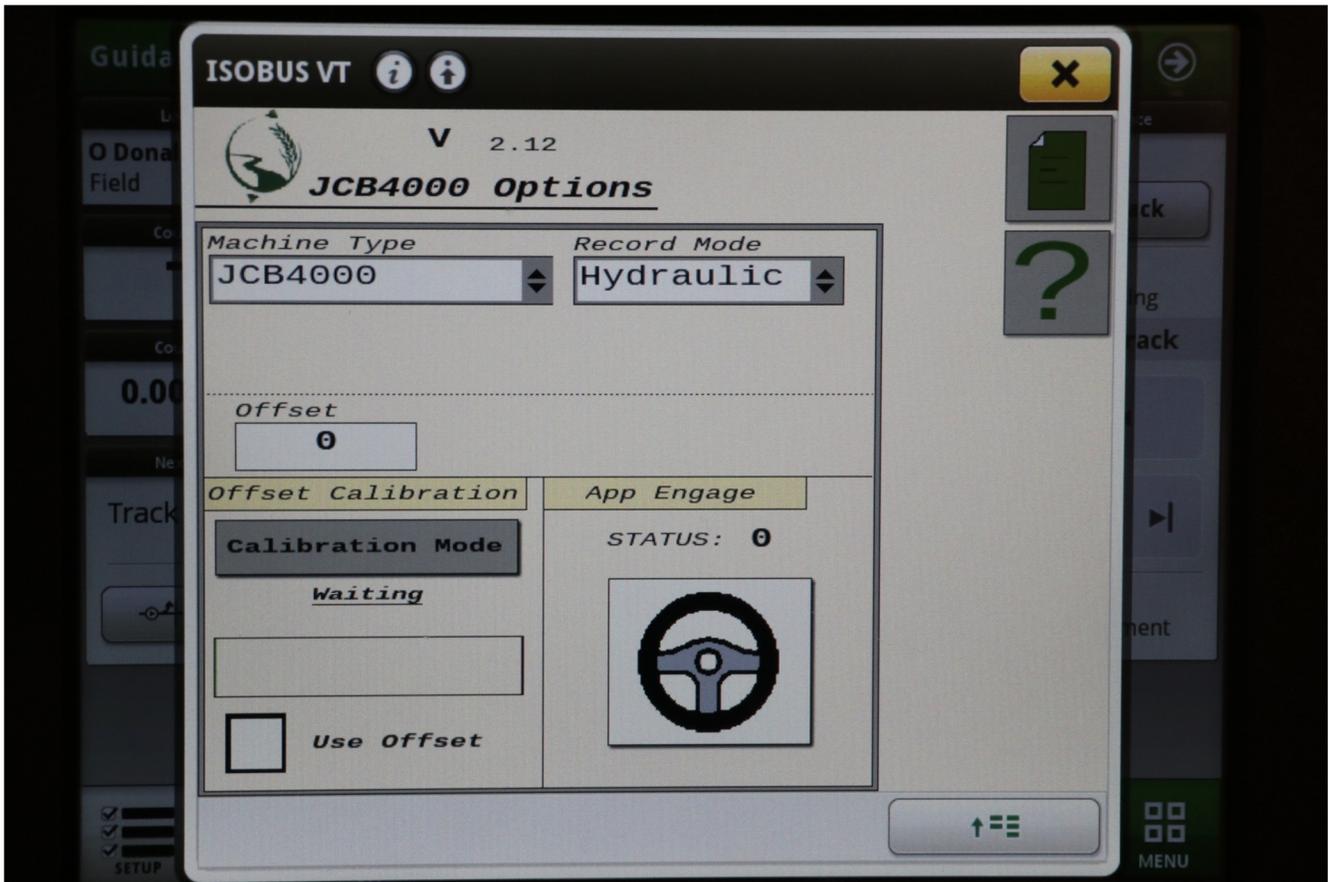


Step 7a: Calibration (JCB8000) - ISOApp

Section – Steering Valve: Allows the user to set the left and right max of the JCB machine. To calibrate, steer as far left as possible and press, “Set Left”. Then, steer as far right as possible and press, “Set Right”.

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.



Step 7b: Calibration (JCB4000) - ISOApp

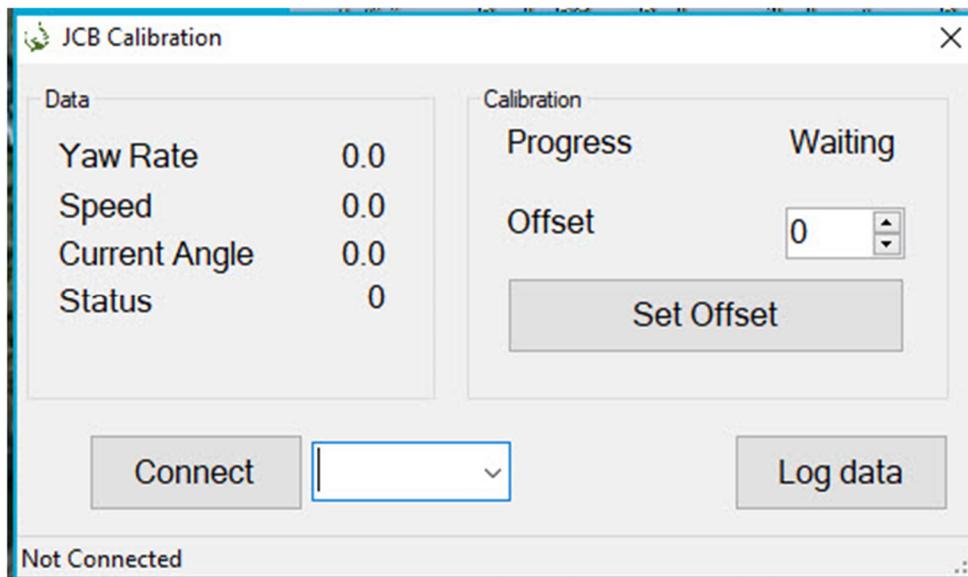
Section – Offset Calibration: Allows the user to calibrate machine steering angle offset. Some machines will not need this calibration, however some machines will. The offset can be changed by pressing on the offset value and entering an appropriate value, or by running offset calibration. In order for offset to take effect, the user must check the offset checkbox at the bottom of the page.

Offset calibration is a process that will attempt to determine the correct offset for the user's machine. It is recommended to manually fine-tune the offset slightly after calibration to determine the most accurate offset. Calibration works best on a flat surface. To start calibration, prepare machine for autosteer and press the button labelled, "Calibration Mode". The label below should change from "Waiting" to "Ready to Engage". The user can now engage the machine, at which point it will steer straight and collect data for approximately thirty seconds. Progress is shown through a progress bar in the middle of the Offset Calibration section. Once complete, the offset label will be populated with an approximate offset.

Step 7c: Calibration (JCB4000) - Backup

The JCB-Bridge must be calibrated to achieve the best possible performance.

- Download the zip archive from www.agragps.com/download/CalibrationJCB.zip
- Unzip the archive and run the Windows installer (.msi file)
- Open the Bridge at the front plate (4 phillips screws) and connect the Bridge to a Windows laptop with a mini-usb to USB cable
- Run the mbedWinSerial_16466.exe file from the archive. This will add a virtual serial port to the Bridge. Important: The Bridge must be connected during the install!
- Now start the installed Calibration application



- Press the "Connect" button, the com port should be automatically selected
- To calibrate manually, move the offset value up/down and press the "Set Offset" button to set the offset value inside the Bridge. If the machine is hanging towards the right of the line, set the offset to a number below zero, and vice versa. Start off at small values such as -5 to -10 and adjust accordingly.
- To calibrate automatically, drive forward at around 5km/h on even ground and engage the steering. You will need around 15 seconds of driving forward. Once the calibration has completed, it will set the "Offset" value to an amount calculated based on the machine's behavior. Press the "Set Offset" button to send this value to the Bridge.