

# INSTALLATION MANUAL

## Agra-GPS CAT-JD Bridge for Challenger-tractors



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#### Release Notice

This is the April 2020 release (Revision E) of the CAT-JD Bridge Installation Manual.

### **Disclaimer**

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

## **Important Safety Information**

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

- Be alert and aware of surroundings.
- Do not operate the CAT-JD Bridge system while under the influence of alcohol or an illegal substance.
- Remain in the operator's position of the machine at all times while the CAT-JD Bridge system is engaged.
- Determine and remain a safe working distance from other individuals. The operator is responsible for disabling the CAT-JD Bridge system when the safe working distance has been compromised.
- Ensure the CAT-JD Bridge is disabled prior to starting any maintenance work on the machine or parts of the CAT-JD Bridge system.
- Follow all safety instructions from the CAT system as well as the JD system!
- The CAT-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 CAT-JD Bridge. The CAT-JD Bridge is designed to bridge the communication between a CAT tractor (with ISO) 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 CAT-JD Bridge to create steering instructions for the CAT tractor. All conditions for autosteer such as minimum speed, steering enabled etc. must be met by the CAT system before the autosteer engage option in the tractor can be activated.

Steering is engaged with the existing "Autosteer" button in the CAT tractor. The JD-Monitor must have a valid AB-line and must be in "Steer On" mode.

### **NOTICE**

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

## Installation of the CAT JD Bridge

### Step 1: Mounting the CAT-JD Bridge

Remove the access panel to the right of the driver seat.

The CAT-JD Bridge will be installed below this access panel.



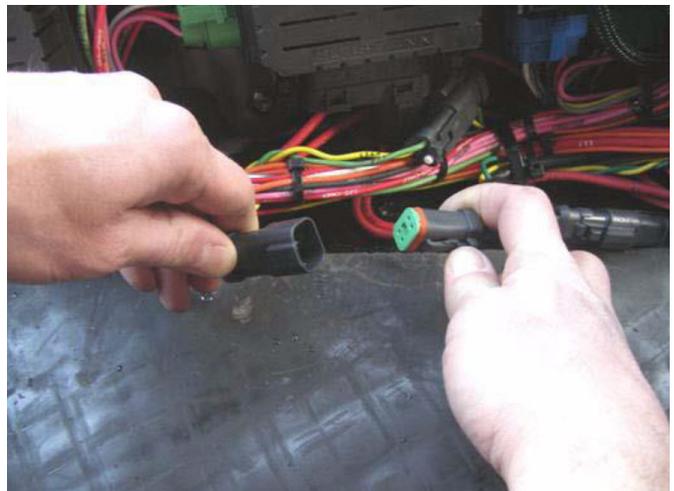
Find the the cabling with the 2 \* 4-pin deutsch connectors.

The cabling has a "Bus extension" label.



Open the 2 \* 4-pin deutsch connector.

Insert the 2 \* 4-pin deutsch connectors from the CAT-JD Bridge wire harness here.



For older CAT A,B or even without letter machines, at times the iso steering is not an option. AgraGPS also has a diagnostic port adapter for these machines.

**If** the adapter cable has a 9-pin circular diagnostic connector it should be connected to the 9 pin diagnostic plug second from the top of the fuse panel. The fuse panel is located under the same access panel as the connectors in the previous step.



The CAT-JD Bridge adapter harness has the 2\* 4-pin deutsch connectors, a 12-pin deutsch connector, and optionally a 9-pin diagnostic connector. The 12-pin deutsch goes to the CAT-JD Bridge.

The adapter also has loose power cables!

You will need to wire power!

1. Red to constant 12V power
2. Purple to switched 12V power
3. Black to ground

#### **OPTIONAL**

4. Blue. This is only needed on older A or B series machine without an autosteer resume switch. By using a momentary switch, shortening this blue wire momentarily to ground autosteer is enabled or "resumed". You will need to purchase an autosteer resume button from your local dealer to complete the install!



## Step 2: Mounting the JD Display

The mounts for the JD display are NOT part of the CAT-JD Bridge, but can easily be manufactured/ordered in the average shop.

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>



## Step 3: Mounting the JD Receiver

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

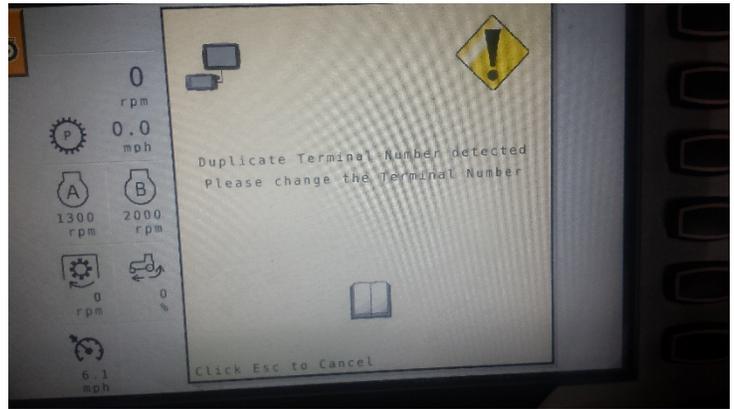
You want to create a mount which is centered left-right on the cab roof.



After the first startup of the system, you may see a "Duplicate Terminal Number..." message. Since the JD display and the CAT display are on the same harness they can have a conflict.

You can correct this assigning a different ID

to the CAT-terminal.

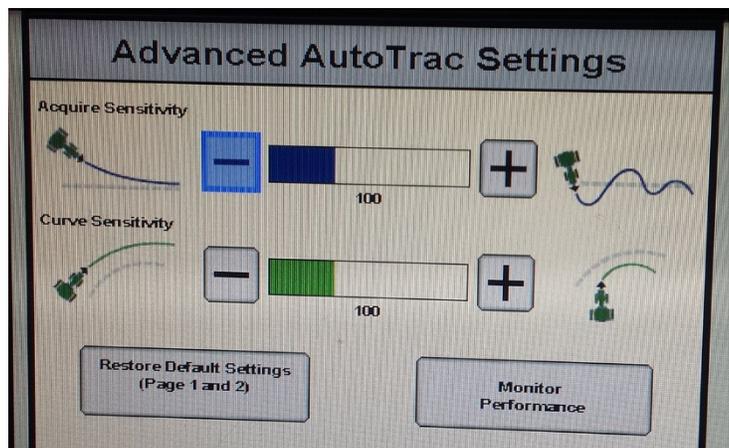
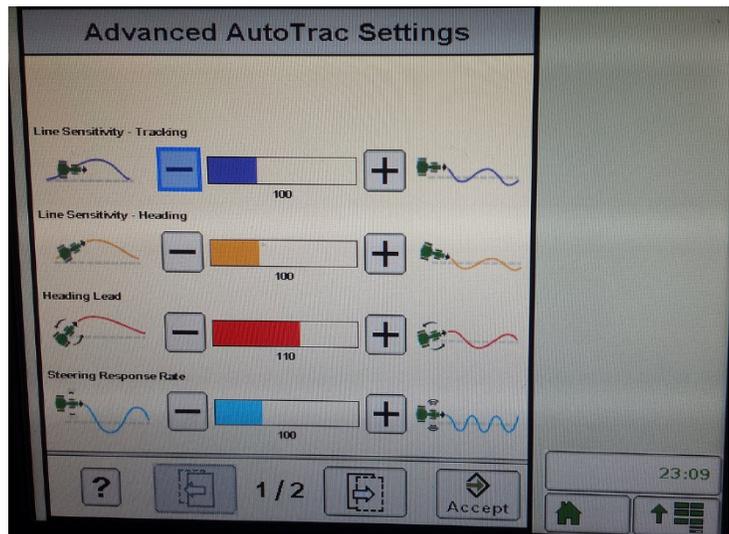


**Step 4: Once the receiver is installed, check the settings for the JD Receiver in the display! Also make sure you do a TCM calibration.**

### Step 5: Adjusting steering

Using the JD display you may adjust your steering performance.

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.



**NOTE:** For CAT Models A and B, the Bridge configuration file must be changed! Using a mini-USB to USB cable plug in the CAT-JD Bridge to a laptop. (Remove blank back plate with a phillips screwdriver).

The "mbed" drive shows a "CONFIG.TXT" file.

Open with notepad and check the value for: MTYPE. The default is MTYPE, 2 for C, D and E models. For A and B please use MTYPE,1

On newer bridge software, changing the config.txt file can be done from the AgraGPS ISO app in the John Deere display. If you have the AgraGPS app in your display, you do NOT need to connect a USB cable and a PC. The change can be done via the drop-down on machine type in the ISO app.

## Appendix A: Check autosteer compatibility on A or B type models

### Step 1: CAN translator

Verify that your tractor has a CAN translator module through the MIDS display:

- Turn the upper knob to the 1 o'clock position
- Press the Enter key and the right arrow key at the same time.



### Step 2:

The number next to "Translator Control" indicates the software version and hardware number.

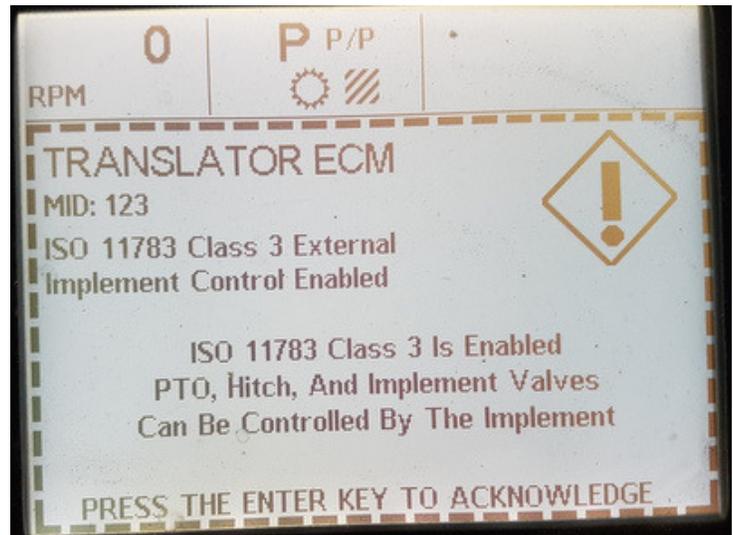
Hardware must be: 2019041-05 or newer (higher).

Software version must be: 2479952 or newer.

Machine Main Module	1789090-03	3220273-00
Hitch Control		
Implement Control	2160658.00	3139372-00
Translator Control	2019041-05	3220266-00
GPS Receiver		

### Step 3:

If the ECM warning appears your tractor is ready to accept autosteer commands over the canbus.



### Step 4:

Rotate the main selector knob to the M->E setting.

Then rotate the lower left knob to highlight "P3".



### Step 5:

Press the left or right button to navigate to "Class 3" indicated by a thick, dark border around it.

Rotate the small block now to highlight "ENABLE".

A warning message appears that ISO is enabled. Acknowledge!

