John Deere 30 Series

PinPoint III Envelop Integration and Setup

John Deere 30 Series ISOBUS Compatibility

- John Deere 30 series machines utilize the JD SprayStar rate controller from the factory
- The SprayStar controller cannot be taken offline on these units as the controller also interfaces critical engine and chassis functions
- It is necessary to install an isolated display alongside of the existing machine controller for a 3RD party to operate correctly without interfering with the machines critical functions
- At this time, it is unlikely that one singular display can be used to run both systems in tandem
- Different JD controllers (2600, 2630, Gen 4, Gen 5, etc) are capable of different task control sections, confirm with your JD dealer

John Deere 30 Series Harnessing

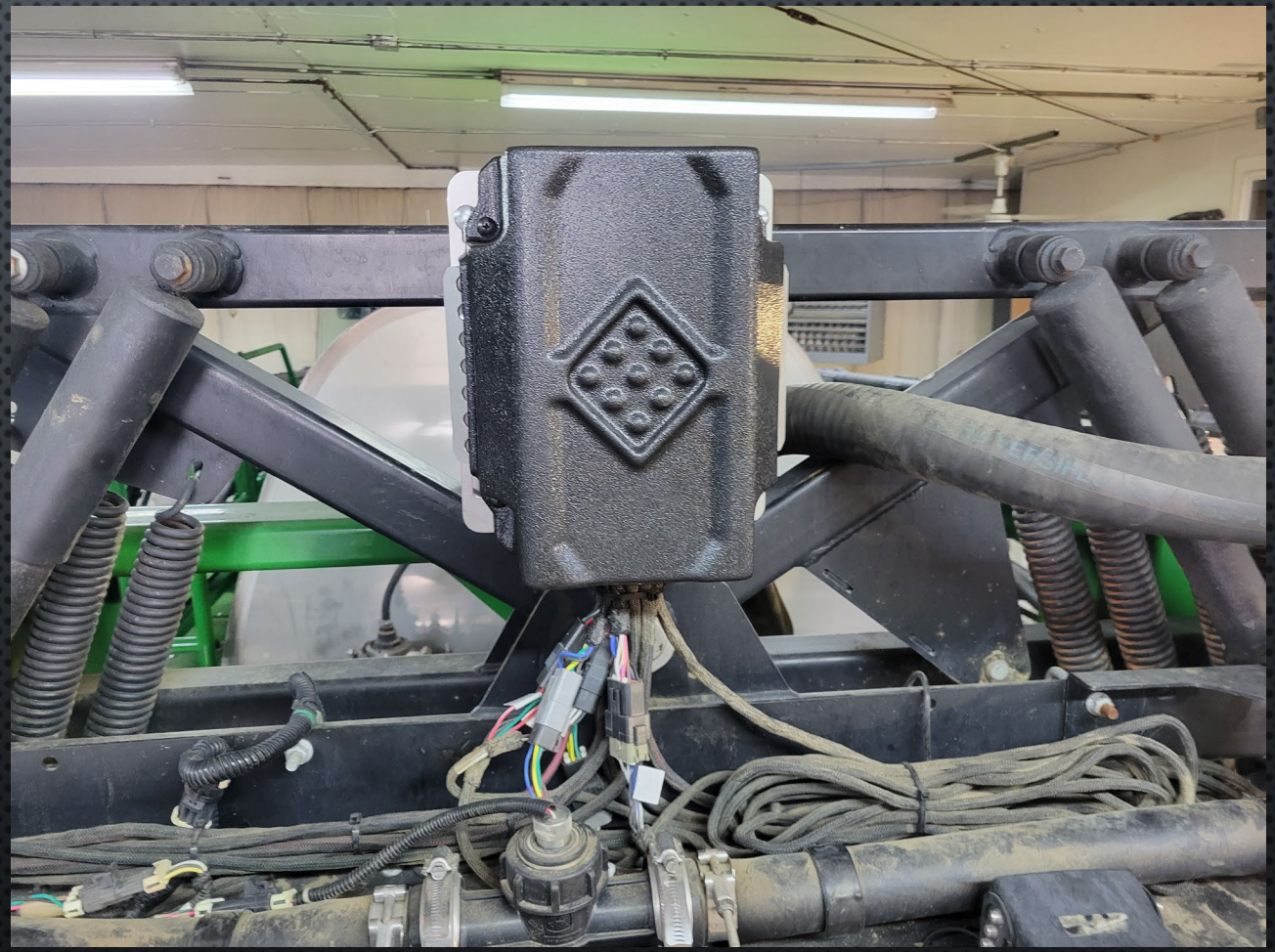
- The Capstan PinPoint III Envelop system requires harnessing from the cab to the rear of the machine where the Envelop hub is located
- There are provisions for the harnessing to accept either John Deere or Ag Leader displays to control the Capstan system. Other brands will likely work, but additional harnessing may be needed
- A harness to interface with JD displays is available through CapstanAG
- Machines with Existing PinPoint II (Legacy) systems can be updated to Envelop with minimal changes from the original setup

  -Existing cab display extension, shutoff harness, servo harness, flowmeter, and power harnessing can all be used for the Envelop system

  -Please inspect the existing harnessing for damage and replace if necessary

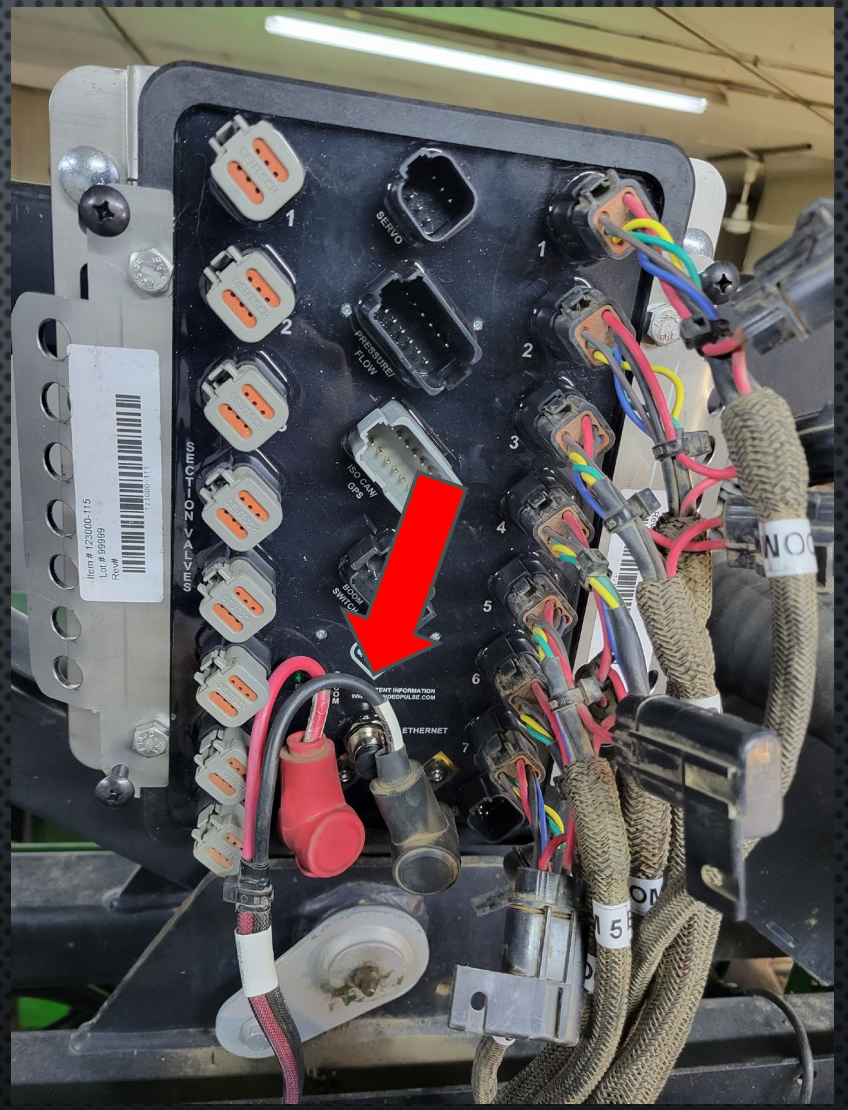
JOHN DEERE 30 SERIES PP3 MOUNTING LOCATIONS

- Power Hub
  - -Mounting location should be similar to PinPoint II systems
  - -Top center of the boom center rack
  - -Mount as low as possible to avoid damage from Trees, etc
  - -Use Capstan's Universal PPIII mounting plate, threaded bolts and slotted angle brackets.
  - -U-bolts can also be used to mount to the 2.5" tubing of the center rack



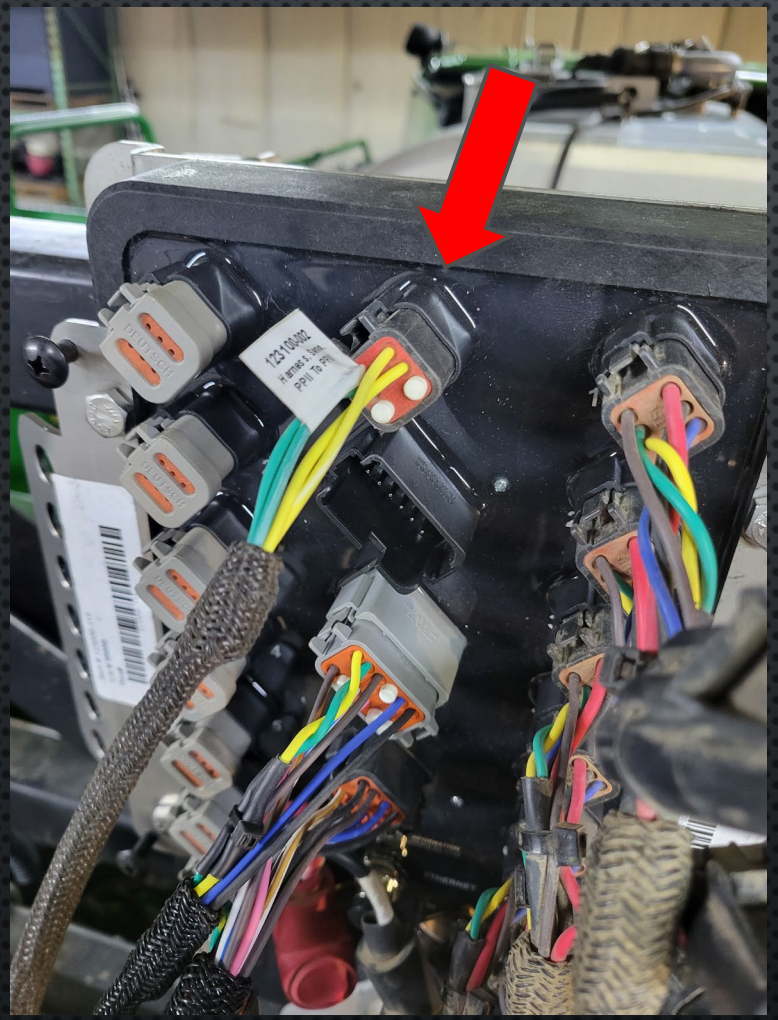
JOHN DEERE 30 SERIES MOUNTING LOCATIONS

- POWER HUB CONNECTIONS
  - BATTERY POWER
  - SECURED WITH ¼” BOLTS AND FLANGE NUTS
  - INSTALL DUST CAPS OVER LEADS

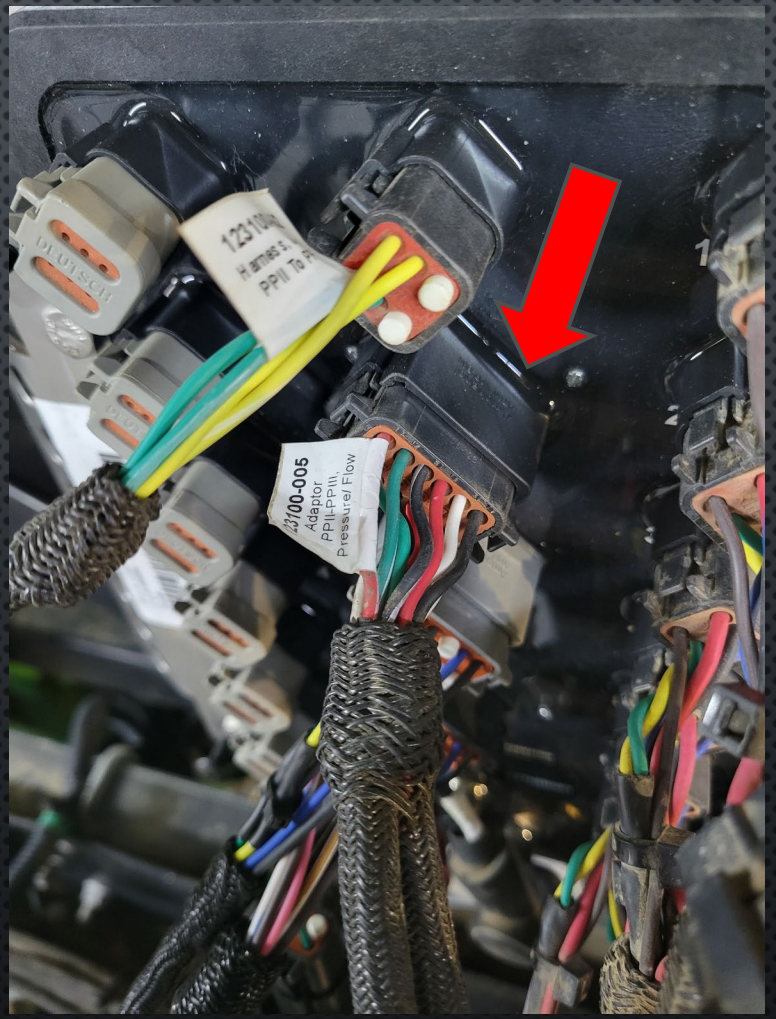


JOHN DEERE 30 SERIES PP3 MOUNTING LOCATIONS

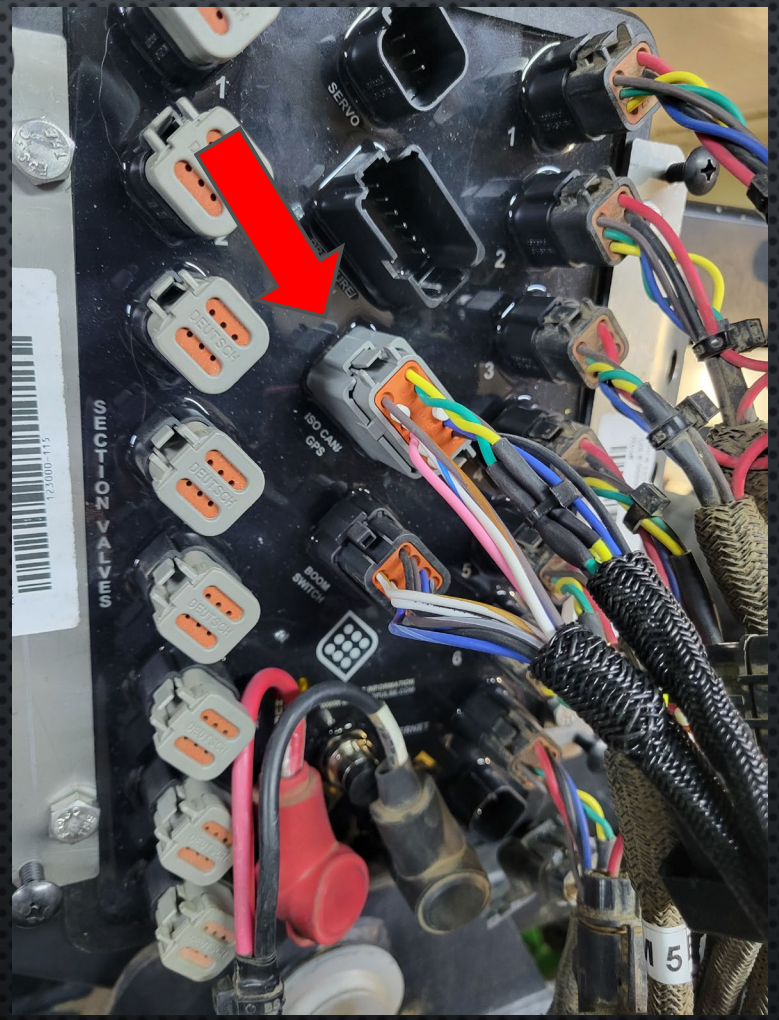
- POWER HUB CONNECTIONS



Servo Port

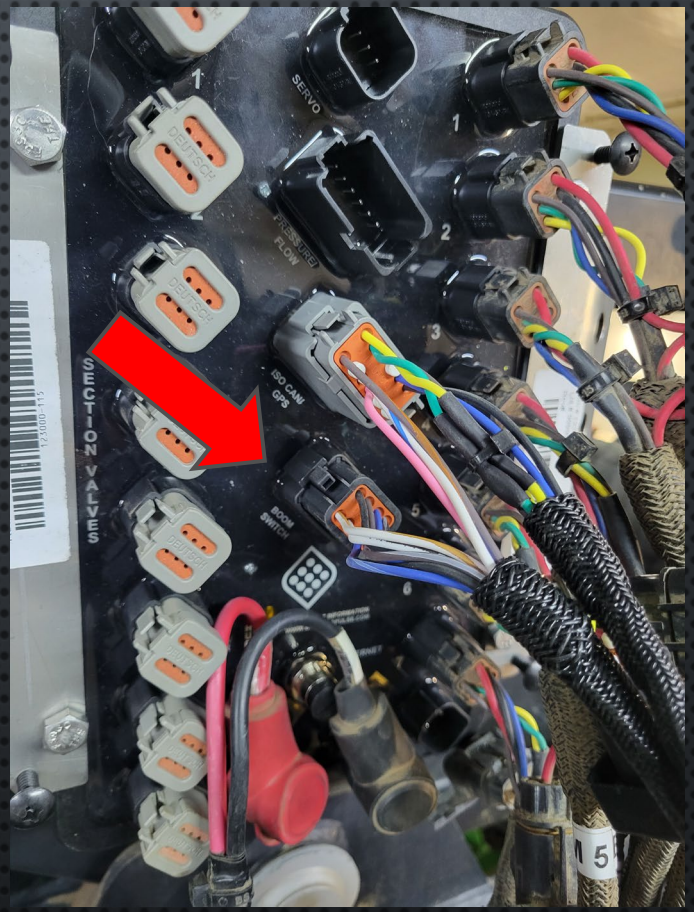


Pressure/Flow Port



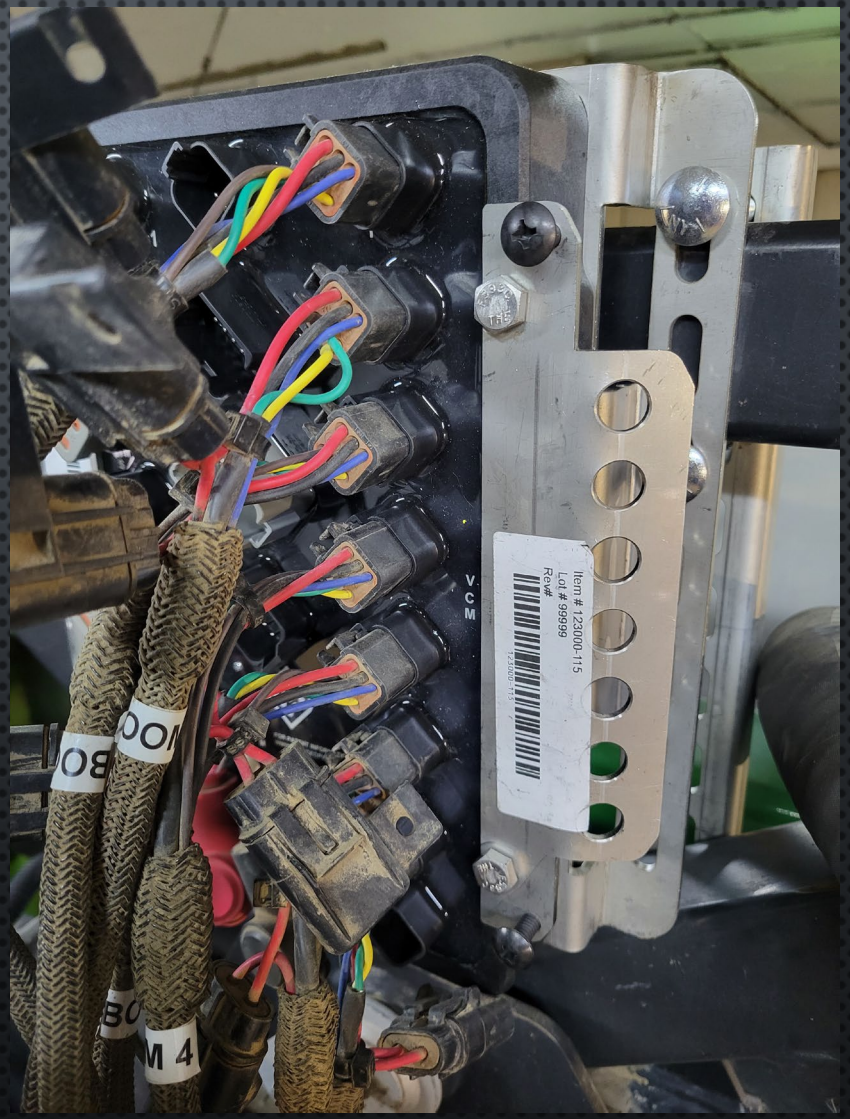
ISO/GPS And Boom Switch

JOHN DEERE 30 SERIES PP3 MOUNTING LOCATIONS

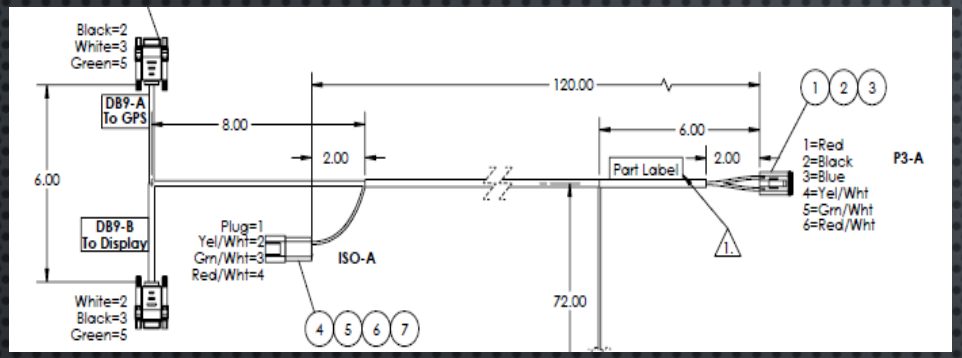


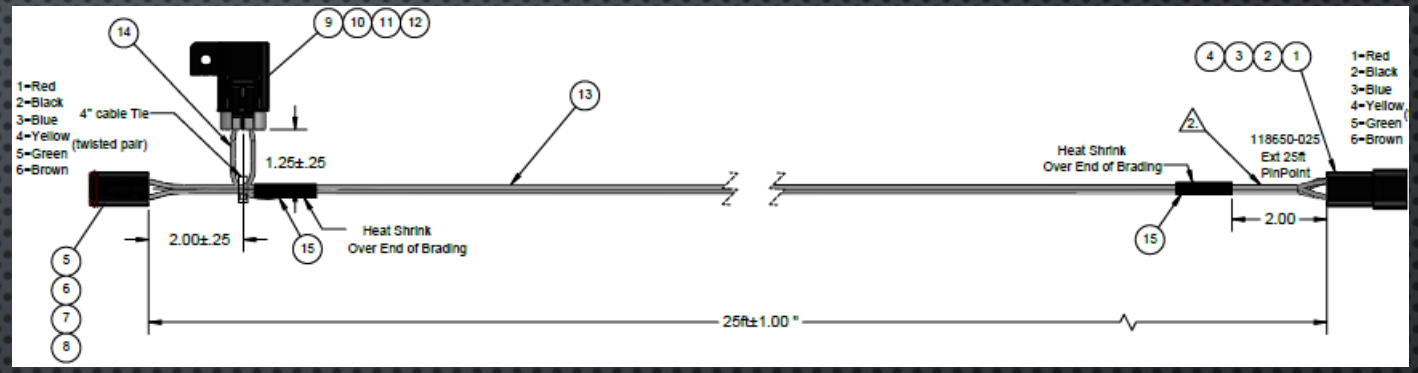
JOHN DEERE 30 SERIES MOUNTING LOCATIONS

- POWER HUB CONNECTIONS
  - VCM CHANNEL CONNECTIONS
  - ROUTE CONNECTIONS AGAINST STRAIN RELIEF IF DESIRED
  - INSTALL DUST PLUGS INTO UNUSED PORTS



JOHN DEERE 30 SERIES PP3 INTERFACE HARNESSING





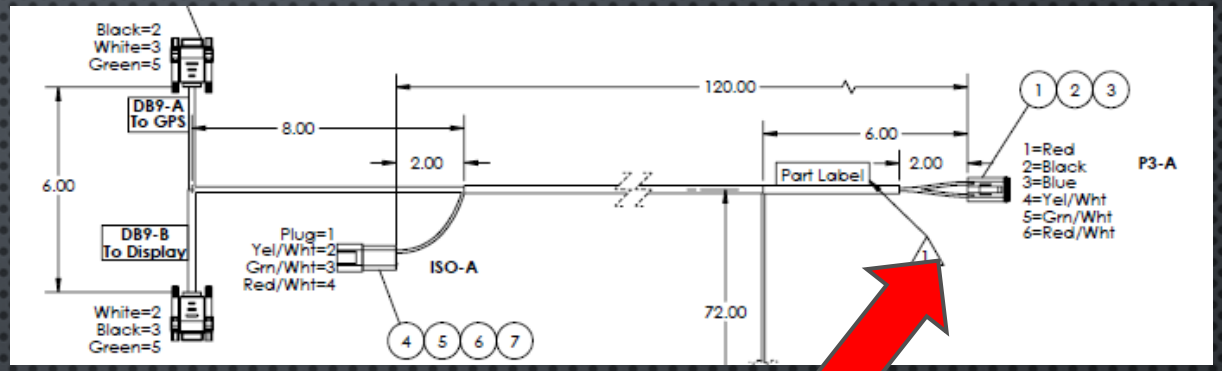
- JOHN DEERE 30 SERIES MACHINES LARGELY USE PINPOINT II STYLE HARNESSING WITH ADAPTING HARNESSES AT THE HUB LOCATION
- THIS WAS DONE TO STREAMLINE BOTH NEW INSTALLATION AND UPGRADE KITS
- A PINPOINT CAN EXTENSION HARNESS WILL CARRY THE ISOBUS SIGNALS FROM THE HUB TO THE DISPLAY IN THE CAB
- A "CAB" HARNESS WILL INTERFACE WITH THE CAB EXTENSION AND CARRY SIGNALS TO THE DISPLAY HARNESS IN THE CAB
- ON SYSTEMS USING A JD DISPLAY, SERIAL GPS IS ALSO CARRIED FROM THE CAB BACK TO THE PP3 HUB

JOHN DEERE 30 SERIES PP3 INTERFACE HARNESSING

- ISOBUS/GPS Extension
  - Plug into 6 Pin Connection off of ISO/CAN Adapter
  - Route to back of the cab along the RH frame rail (Red arrow)
  - Existing extension on PinPoint II machines is likely labeled “Boom 12”

JOHN DEERE 30 SERIES PP3 INTERFACE HARNESSING

- Cab Harness
  - Route 6 pin connection out back of the cab and down to the RH frame rail where the extension is located
  - Unplug existing PP2 display extension (if applicable) and remove
  - Red Arrow referencing the same connection

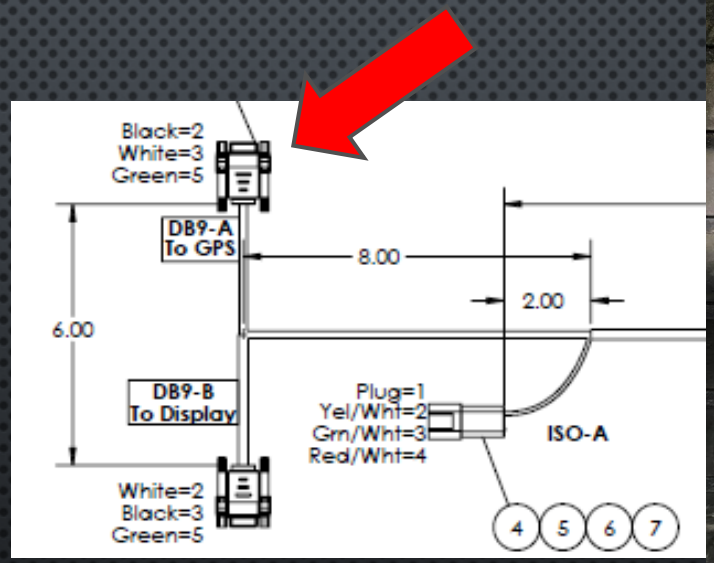


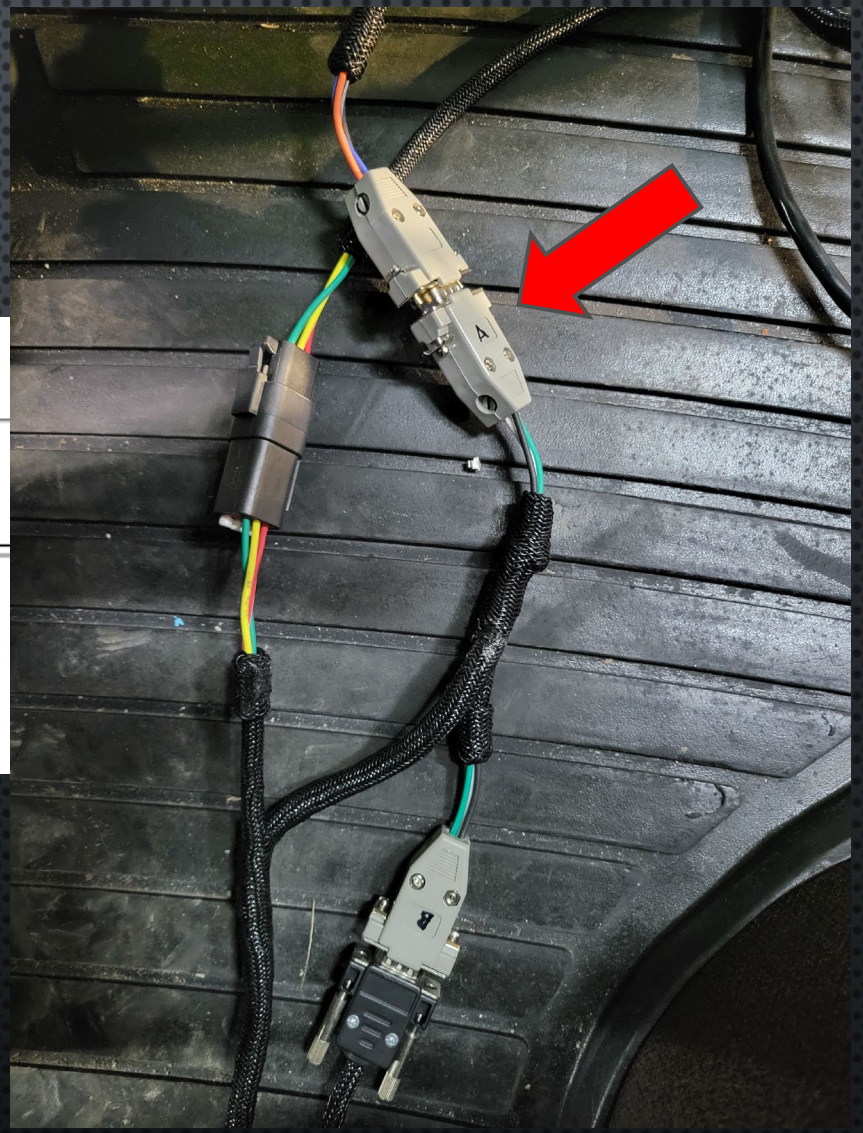
JOHN DEERE 30 SERIES PP3 INTERFACE HARNESSING

- Cab Harness
  - Routed through the back of the cab, along RH window and near the power strip

JOHN DEERE 30 SERIES PP3 INTERFACE HARNESSING

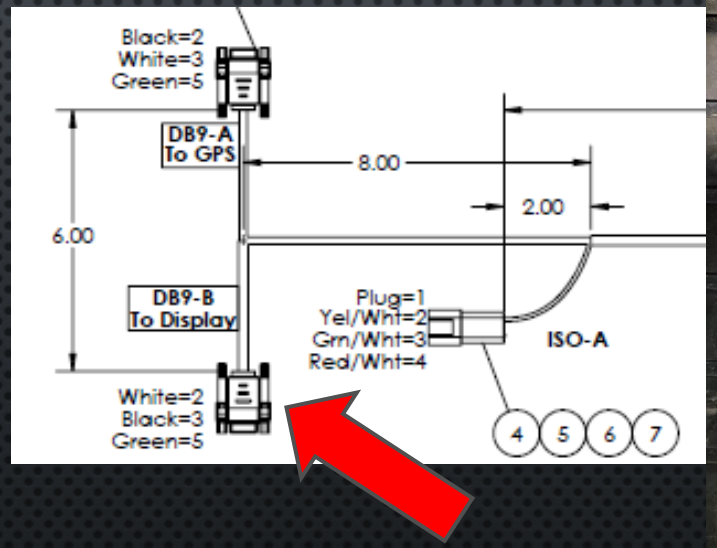
- CAB HARNESS
  - ROUTED THROUGH THE BACK OF THE CAB, ALONG RH WINDOW AND NEAR THE POWER STRIP
  - IF JOHN DEERE STARFIRE IS USED TO SUPPLY GPS TO THE DISPLAY, INSTALL THE SERIAL GPS ADAPTER HARNESS FROM THE STARFIRE TO THE DB-9A CONNECTION ON THE CAB HARNESS (RED ARROW)

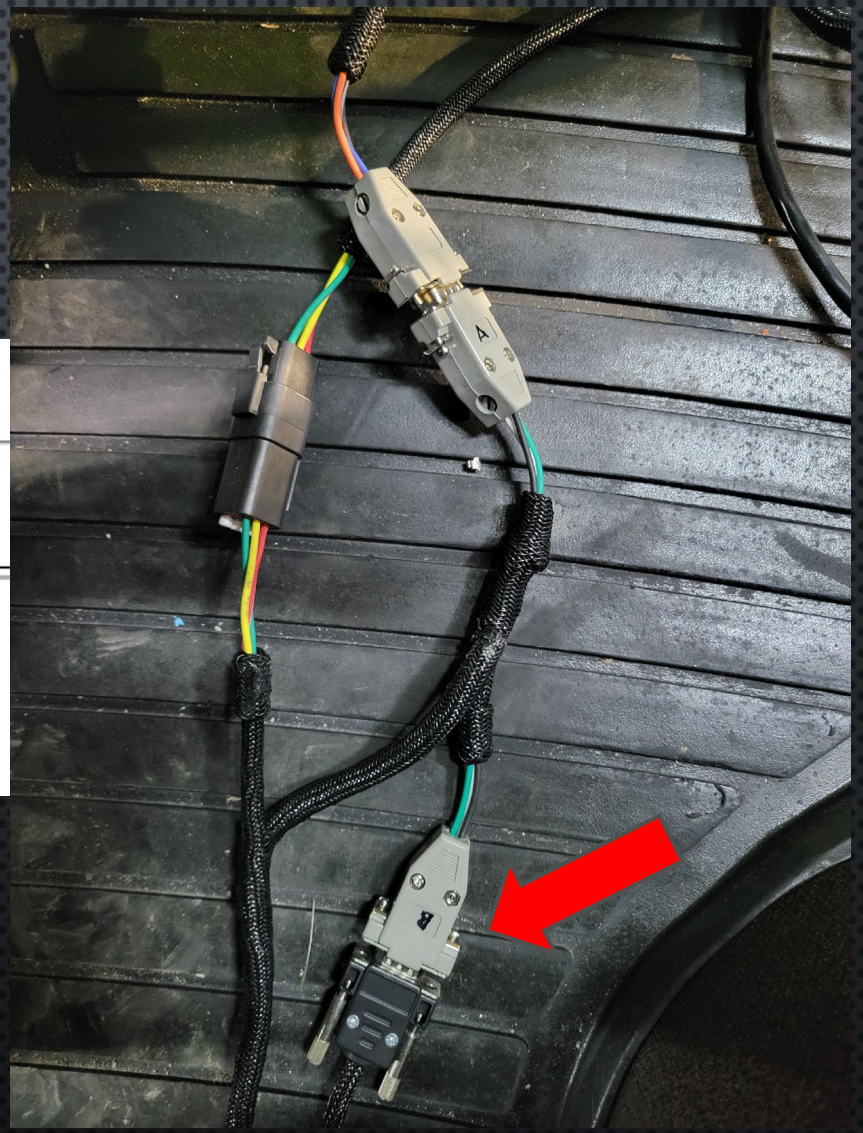




JOHN DEERE 30 SERIES PP3 INTERFACE HARNESSING

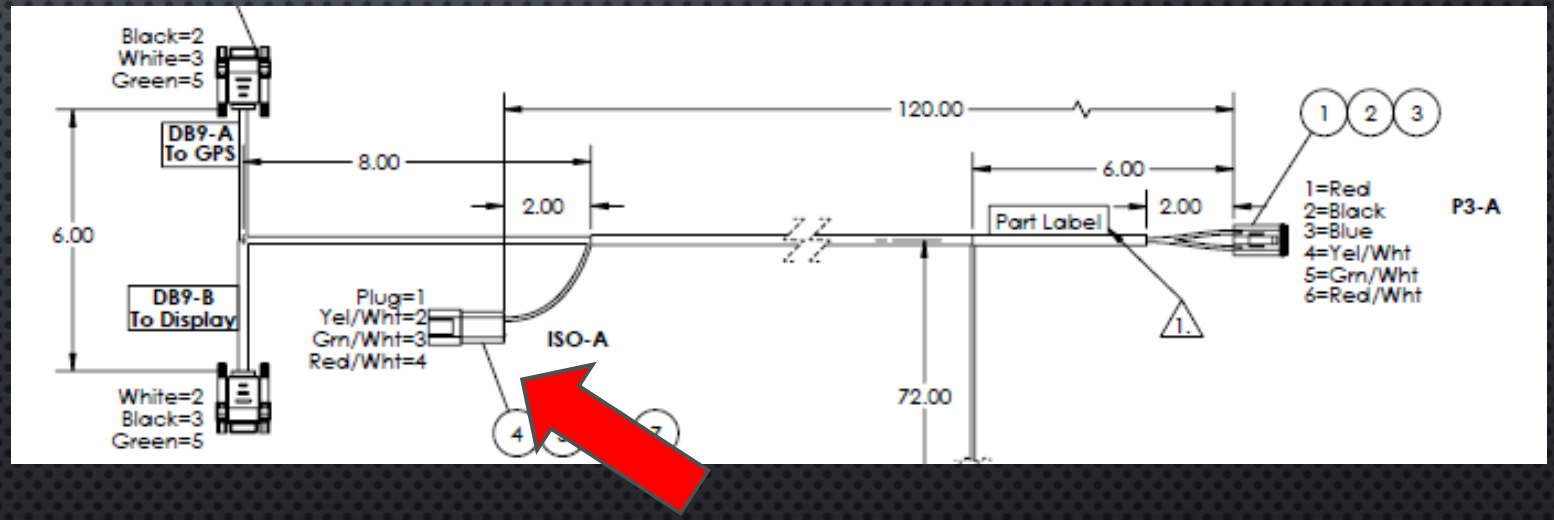
- CAB HARNESS (CONT'D)
  - CONNECTION DB9-B WILL EXPORT SERIAL GPS TO THE JD DISPLAY HARNESS
  - OTHER DISPLAYS WILL LIKELY UTILIZE THEIR OWN GPS SOURCE. IF JD GPS IS DESIRED, UTILIZE THIS PORT AS WELL
  - THIS CONNECTION HAS A NULL MODEM SWAP BUILT IN





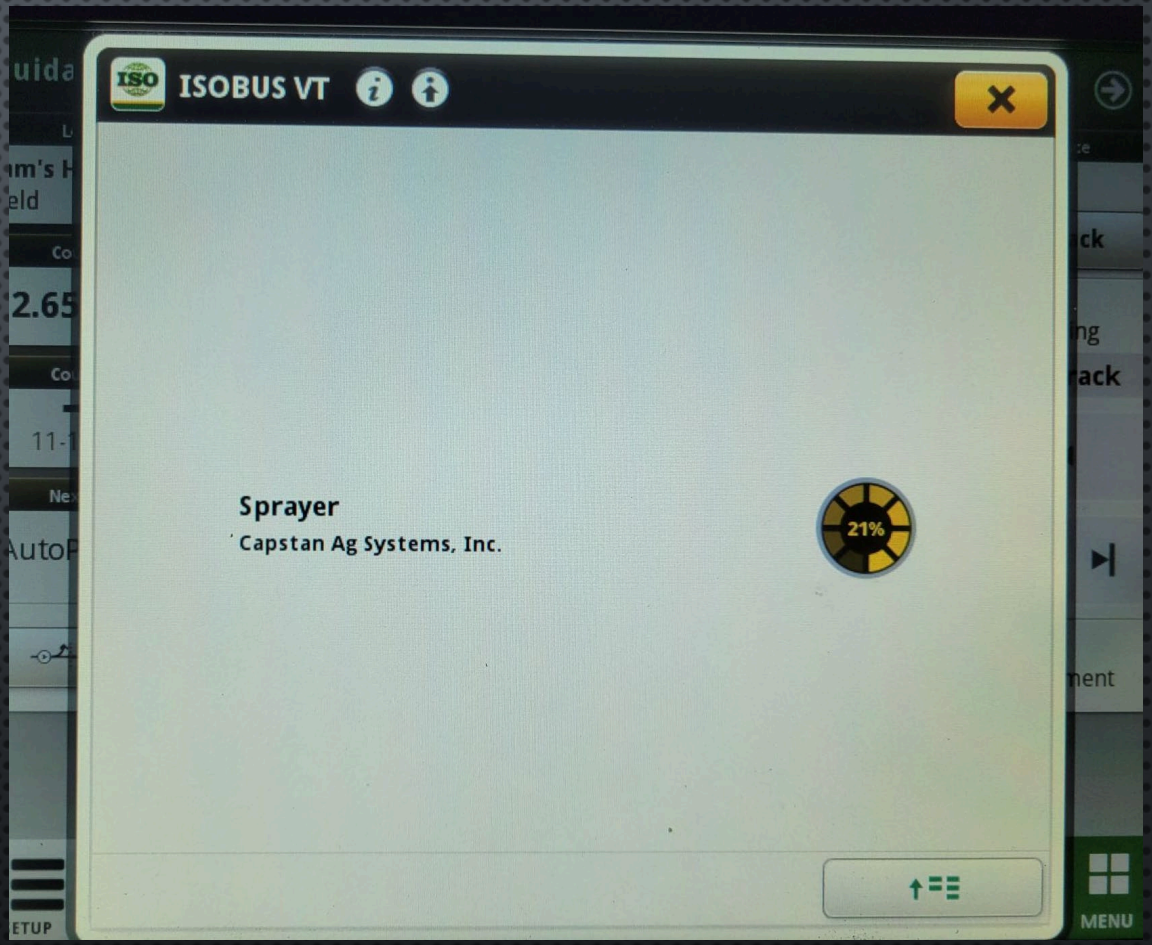
JOHN DEERE 30 SERIES PP3 INTERFACE HARNESSING

- CAB HARNESS (CONT'D)
  - ISO-A CONNECTION WILL BE PLUGGED INTO THE MATING CONNECTION ON EITHER THE JD OR AG LEADER DISPLAY HARNESS
  - IF ANOTHER DISPLAY IS USED, THIS WILL BE THE CONNECTION TO ADAPT TO



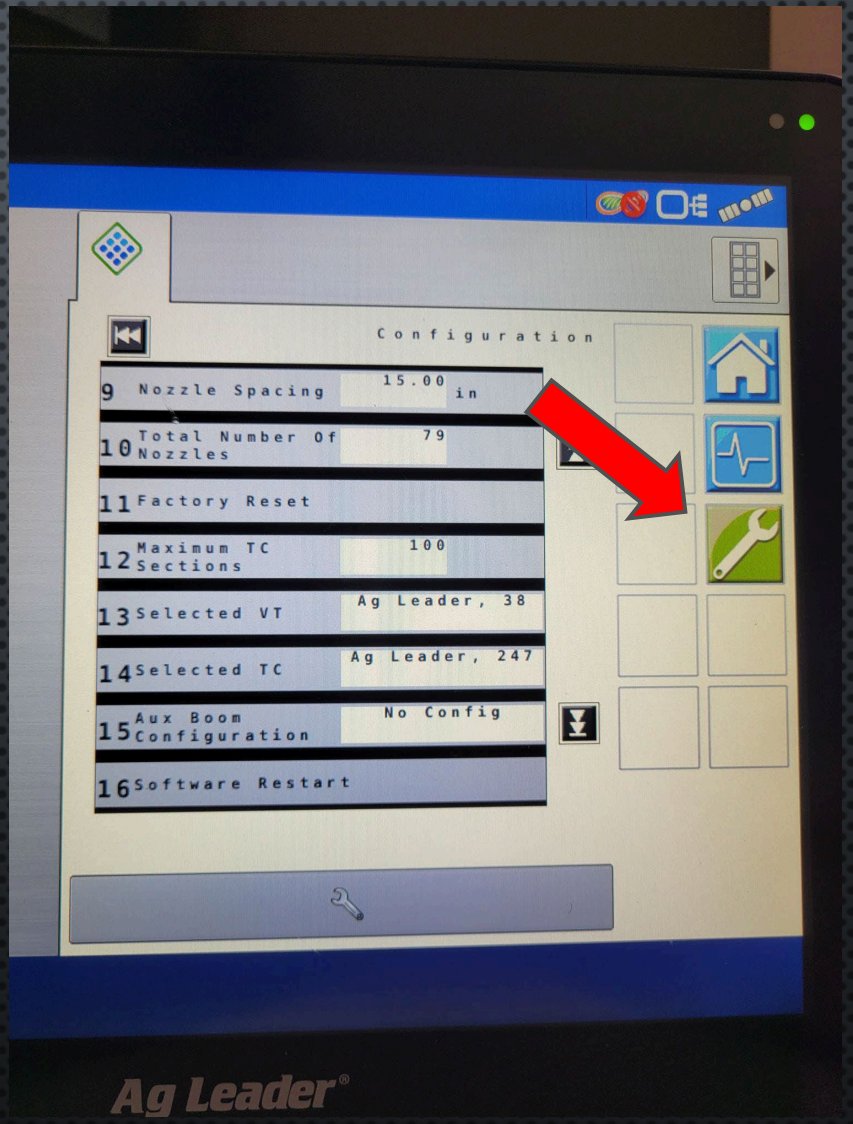
JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

- ISOBUS VT Object Pool Loading
  - Upon first power up, the system will need to load the object pool for the Capstan interface
  - This process may take a few minutes to begin
  - Once object pool is finished loading, you may begin setup of the Capstan system



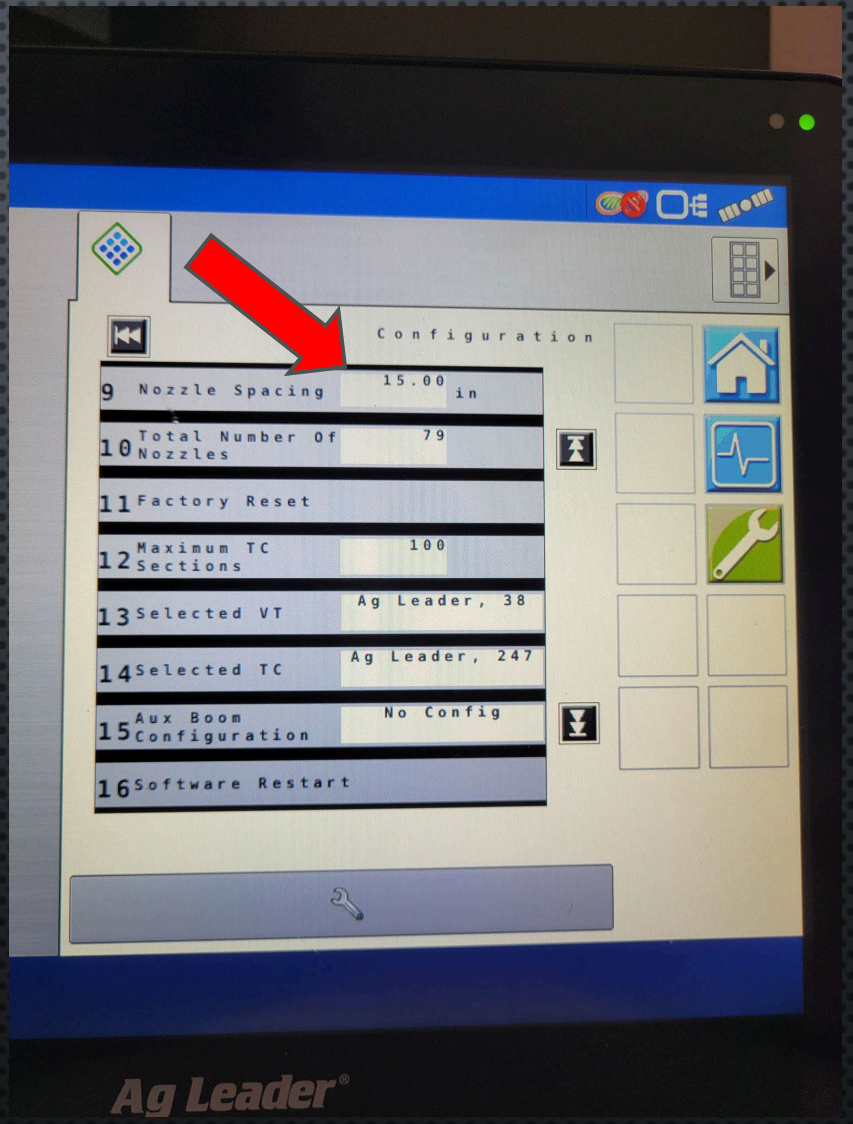
JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

- System Setup
  - Navigate to the wrench icon



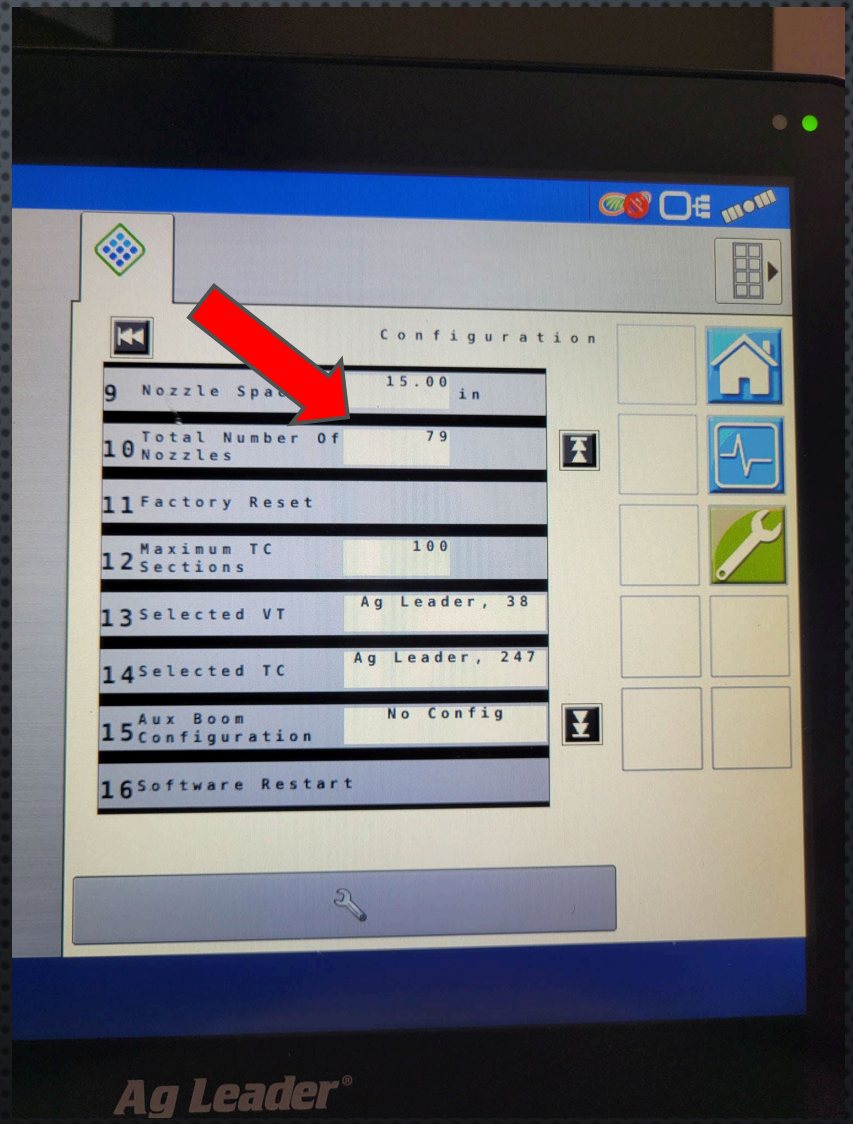
JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

- SET NOZZLE SPACING
  - IN SOME INSTANCES FOR LONGER BOOMS WITH "ON CENTER" SPACING, THE WIDTH NEEDS TO BE ADJUSTED IN SLIGHTLY. OUTER NOZZLE WILL FLICKER ON/OFF IN FIELD IF THIS IS NOT DONE
  - DUE TO ROUNDING, A NUMBER HIGHER (EX.14.86") MAY NEED TO BE ENTERED TO GIVE THE END RESULT OF 14.84"



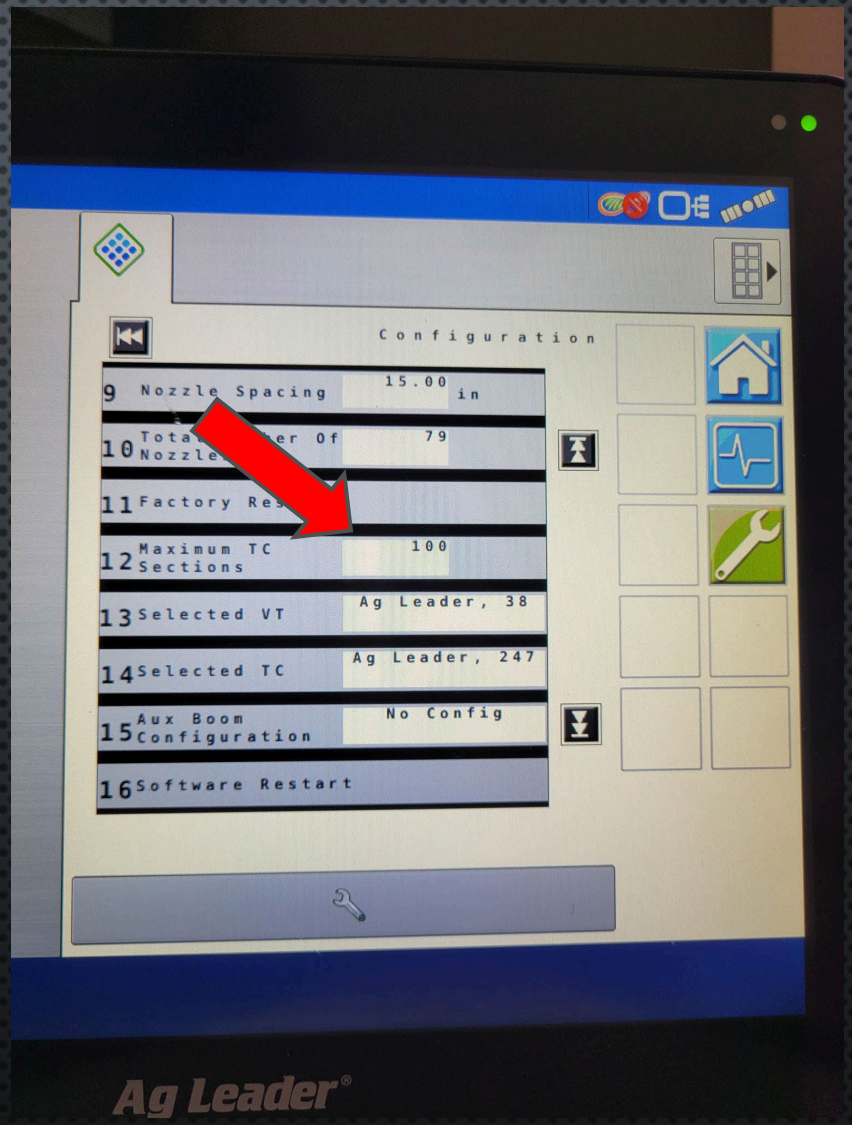
JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

- VERIFY NUMBER OF NOZZLES
  - THIS SHOULD AUTO-POPULATE



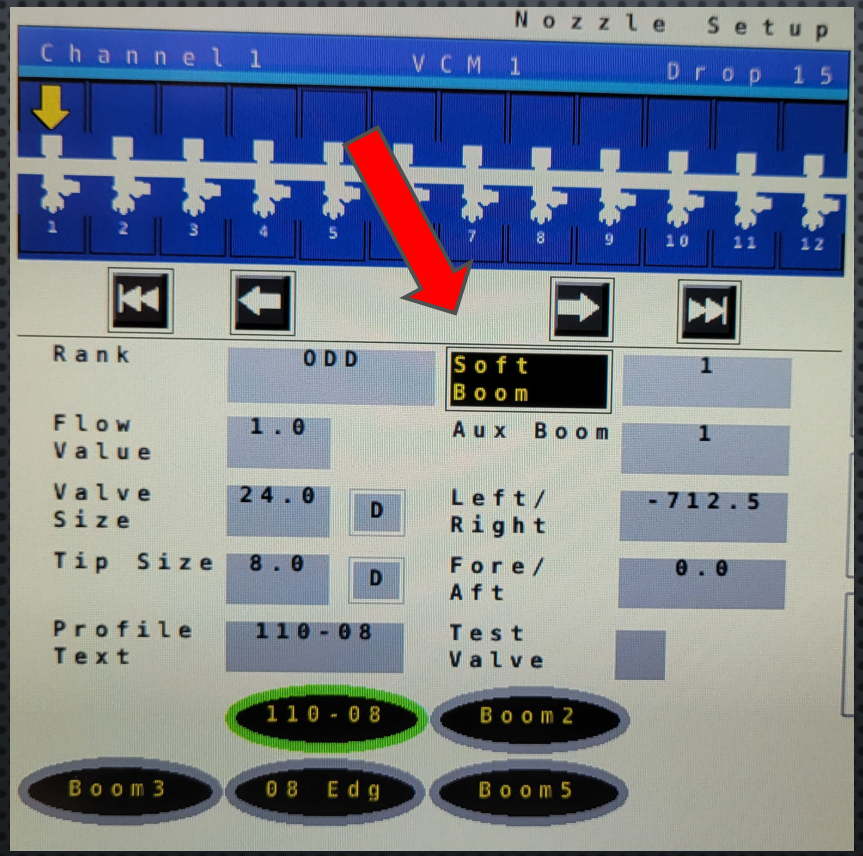
JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

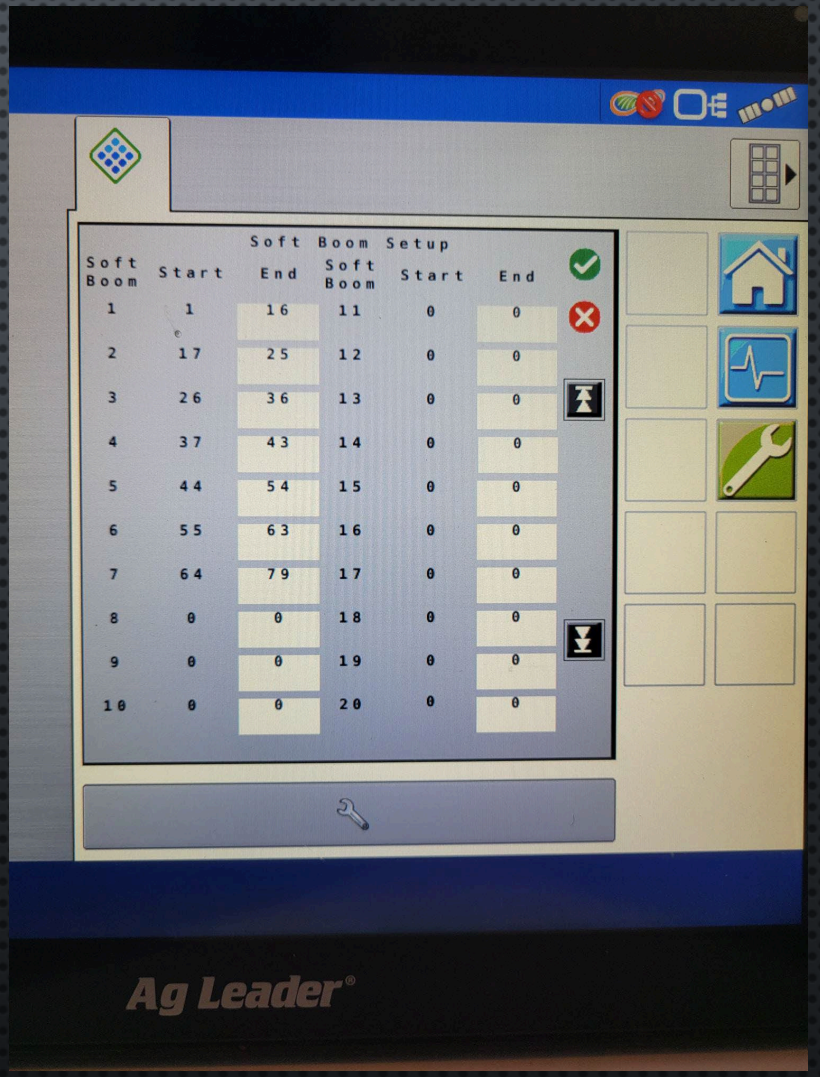
- Maximum Task Control Sections
  - Must be equal to or greater than the number of nozzles on the boom
  - The exception being task controllers that will not accept as many nozzles that are on the boom (ex. John Deere 2630 will only accept 16 sections)
  - Confirm with your display manufacturer



JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

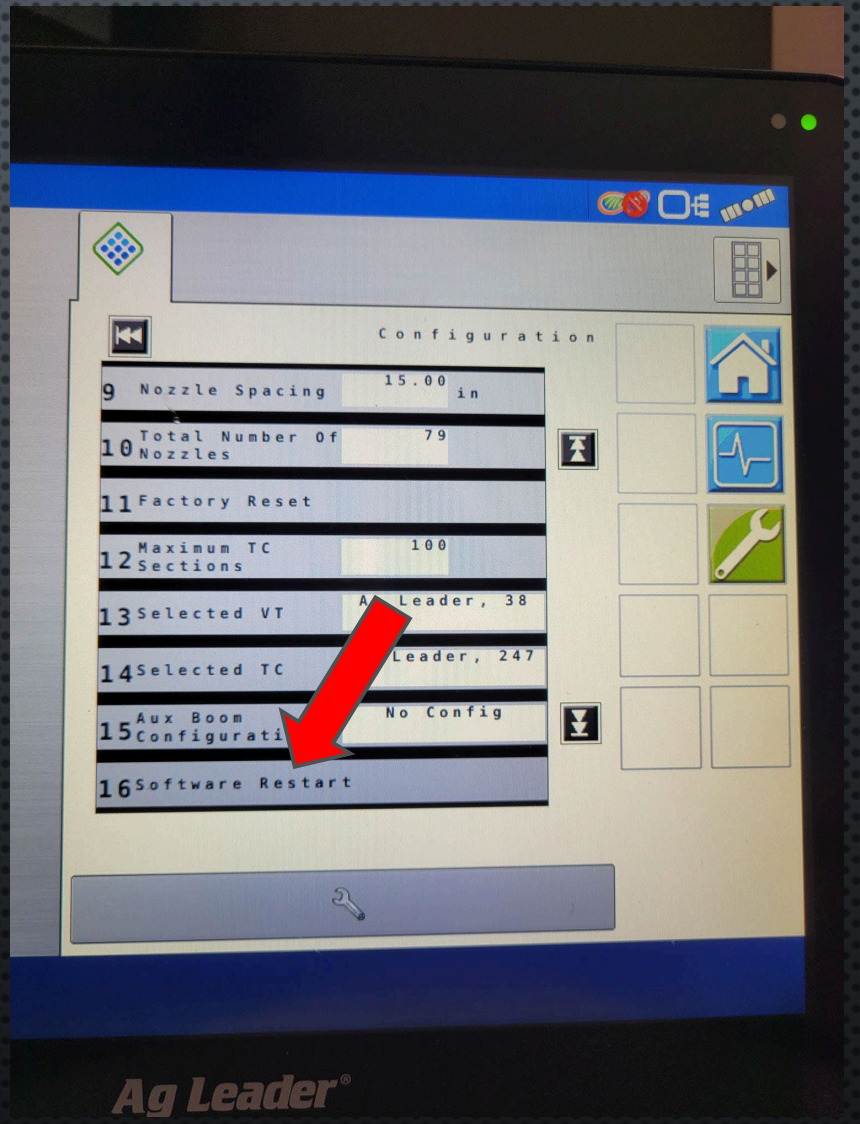
- SOFT BOOM SETUP
  - ASSIGN THE NOZZLES TO THE COORDINATING BOOM SECTION SWITCH FROM THE DEERE BOOM SWITCHES IN THE CAB
  - THIS WILL VARY FOR DIFFERENT BOOM CONFIGURATIONS, 100' 15" BOOM SHOWN HERE
  - BE SURE TO HIT GREEN CHECKMARK AFTER FINISHED





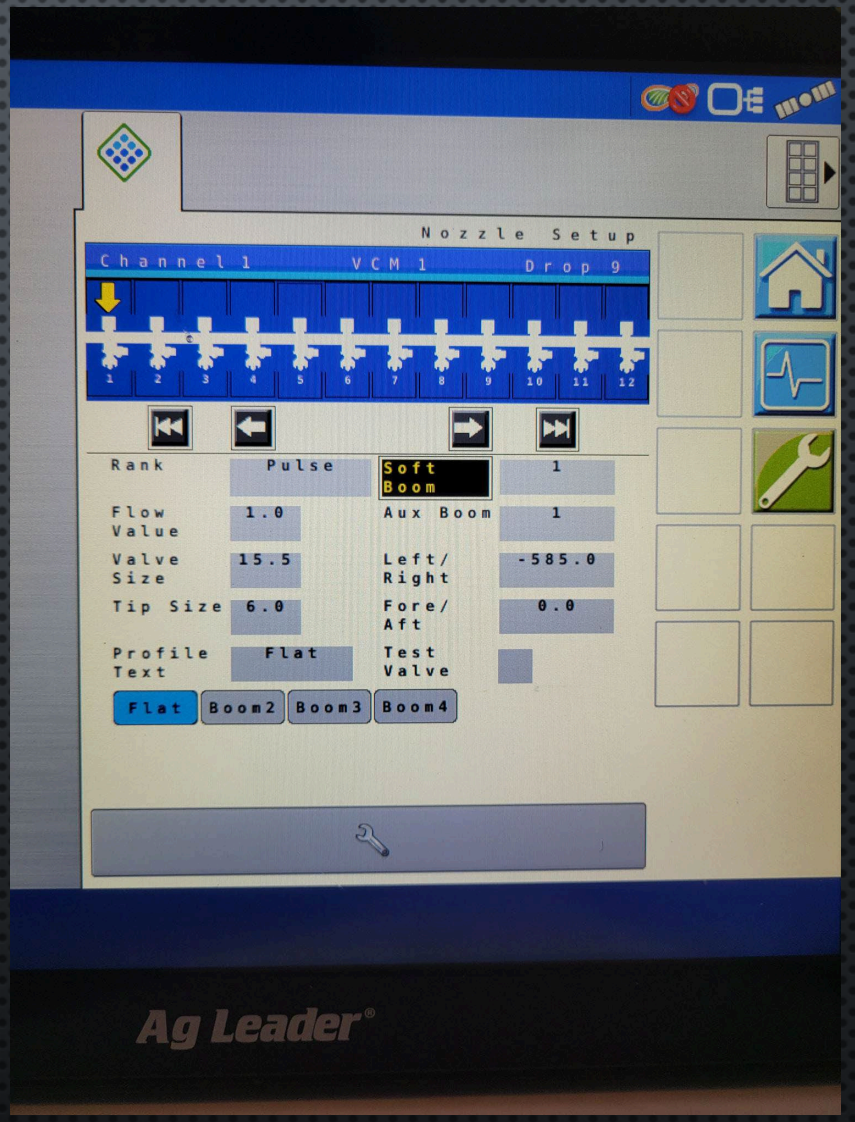
JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

- ALWAYS PERFORM SOFTWARE RESTART AFTER THESE INITIAL SETTINGS TO SEND THE CHANGES TO THE TASK CONTROLLER



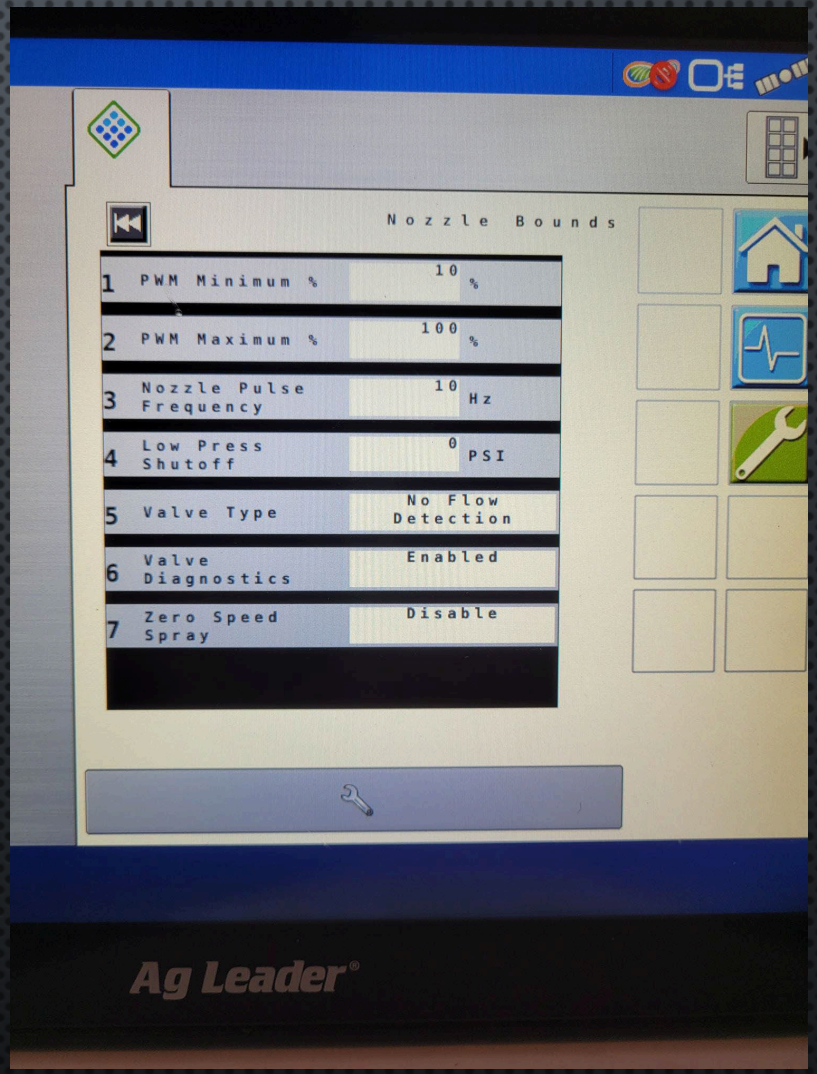
JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

- NOZZLE SETUP
  - ADJUST VALVE SIZE
  - ADJUST TIP SIZE
  - REMEMBER TO DEFAULT BOTH SETTINGS WHEN FINISHED
  - LATER VERSIONS OF CODE WILL PROMPT YOU AND CONFIRM DEFAULT SELECTION
  - ARROW THROUGH AND CONFIRM SOFT BOOM SETTINGS



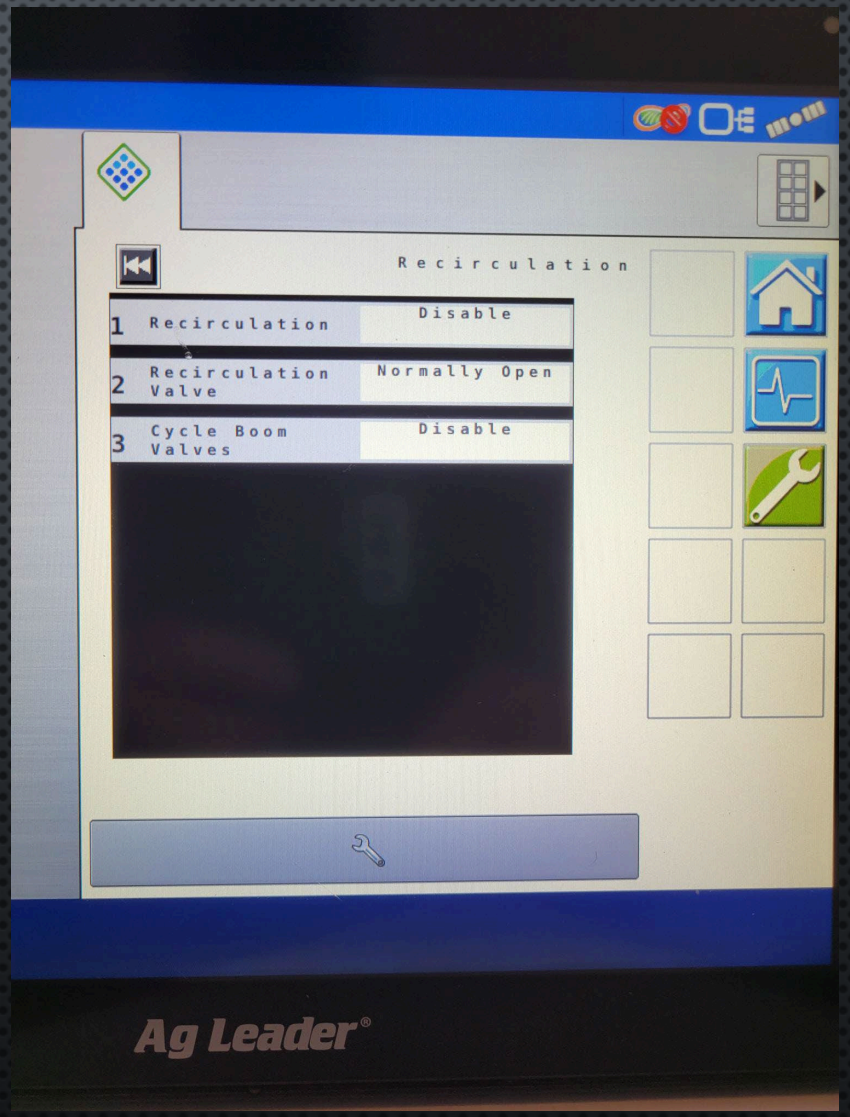
JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

- NOZZLE BOUNDS
  - VERIFY DEFAULT SETTINGS AS SHOWN



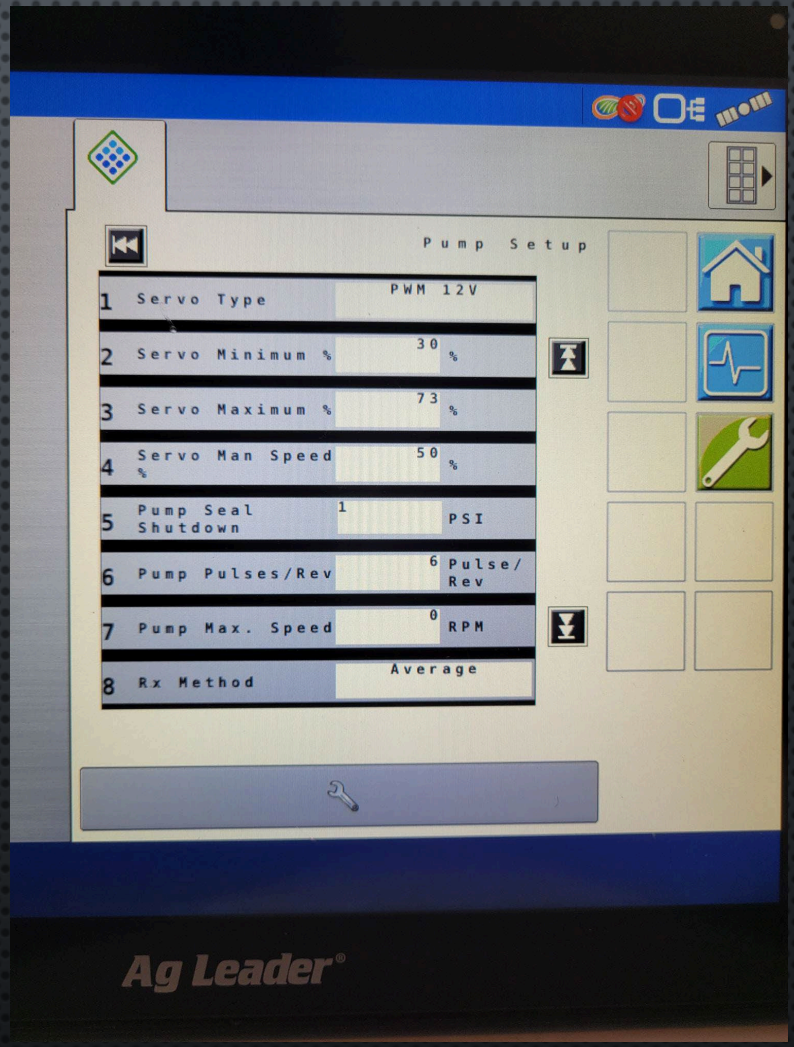
JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

- RECIRCULATION
  - VERIFY DEFAULT SETTINGS AS SHOWN
  - IF AFTERMARKET RECIRCULATION IS USED ON THE MACHINE, ENABLE AND SET VALVE SETTING TO YOUR PREFERRED OPERATION MODE



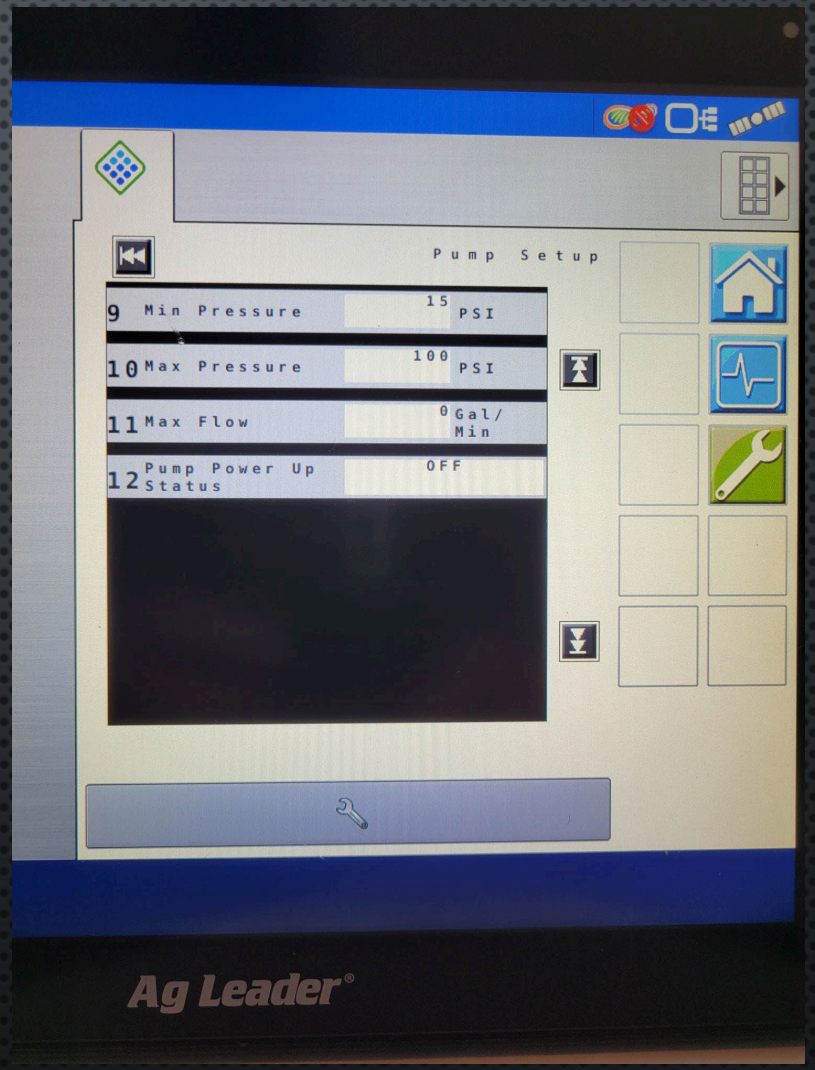
JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

- Pressure Menu
  - Pump Setup
  - Servo min/max are found in the original JD spraystar controller setup
  - These numbers will be the first two digits of the control valve cal number in the JD controller



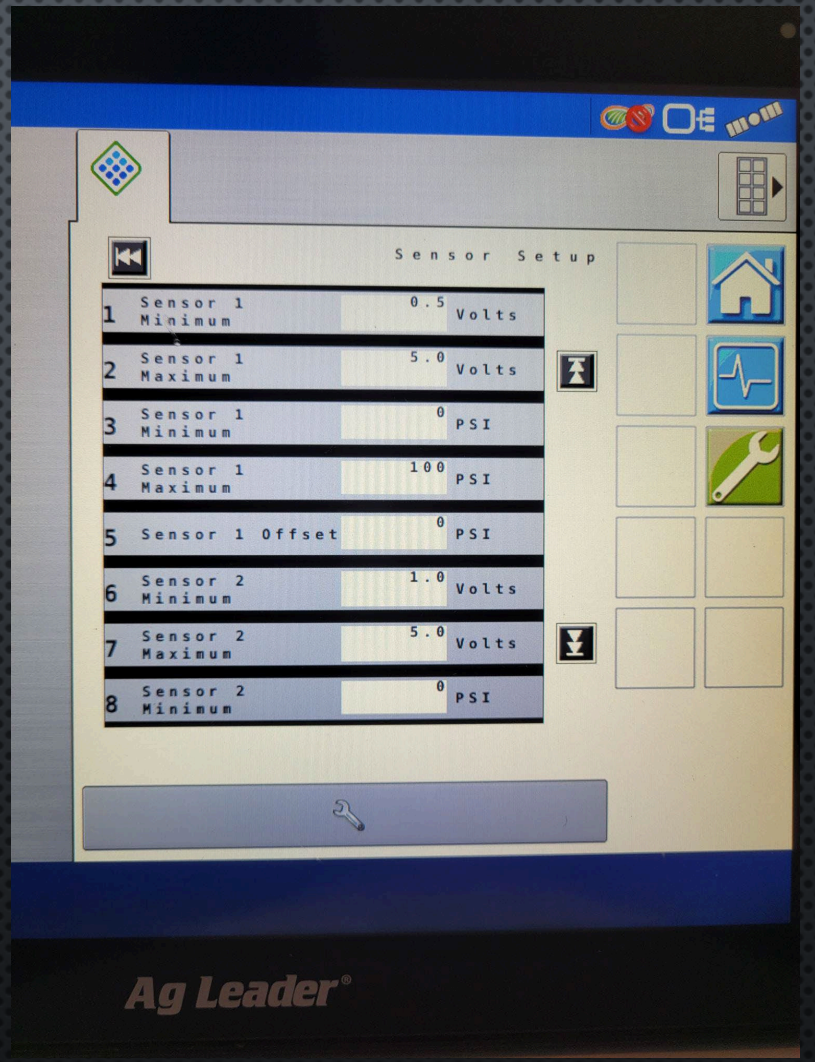
JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

- PRESSURE MENU
  - PUMP SETUP (PAGE 2)



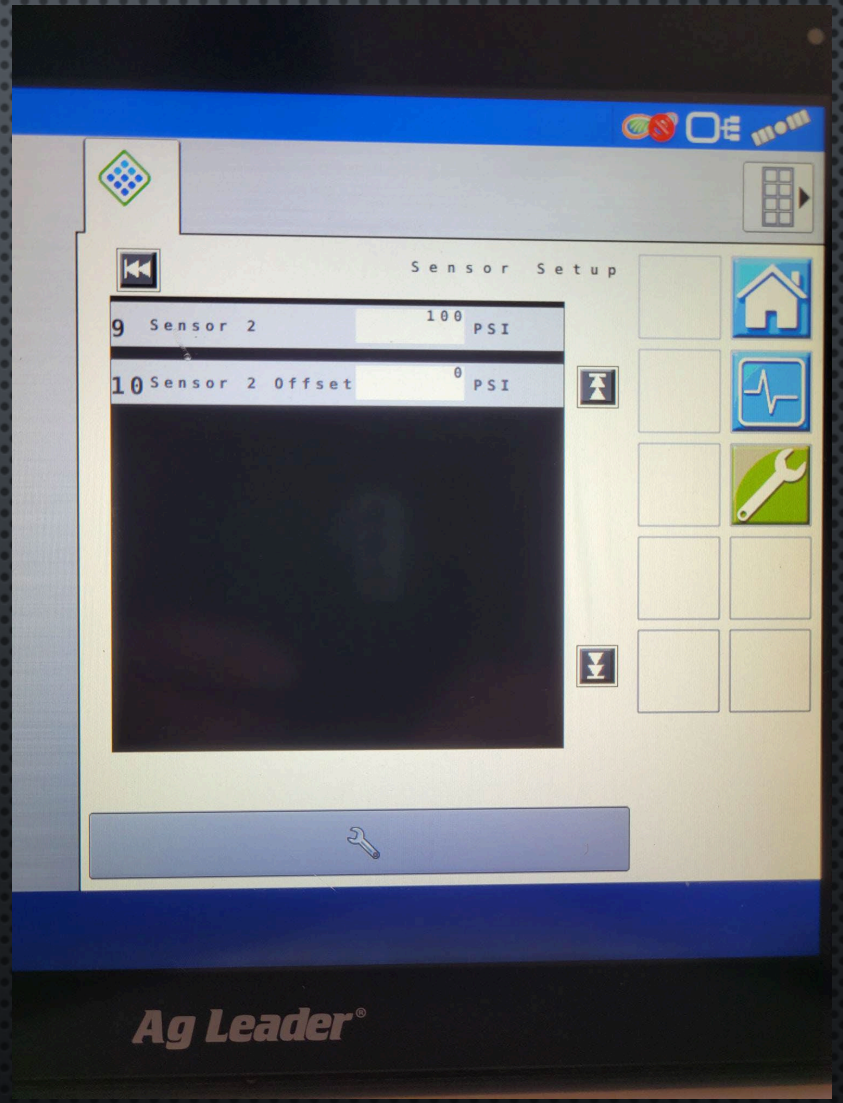
JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

- PRESSURE MENU
  - SENSOR SETUP



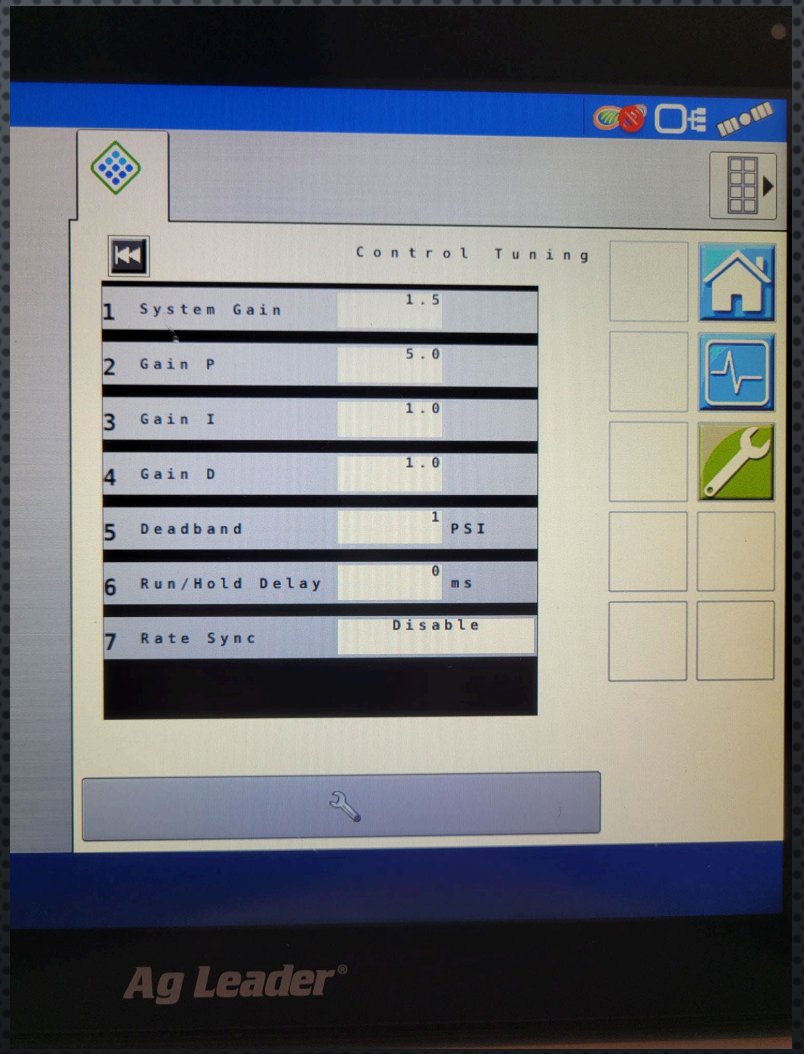
JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

- PRESSURE MENU
  - SENSOR SETUP (PAGE 2)



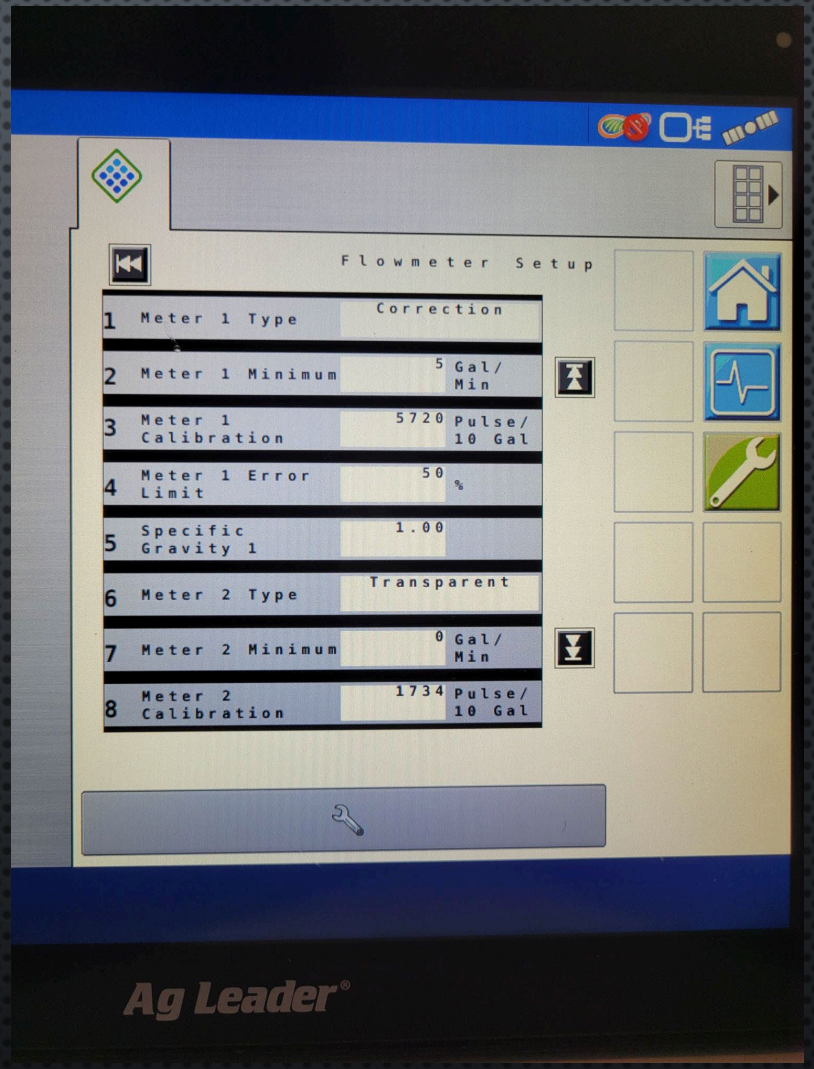
JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

- Pressure Menu
  - Control tuning
  - Raise/lower system gain for better Pressure control performance



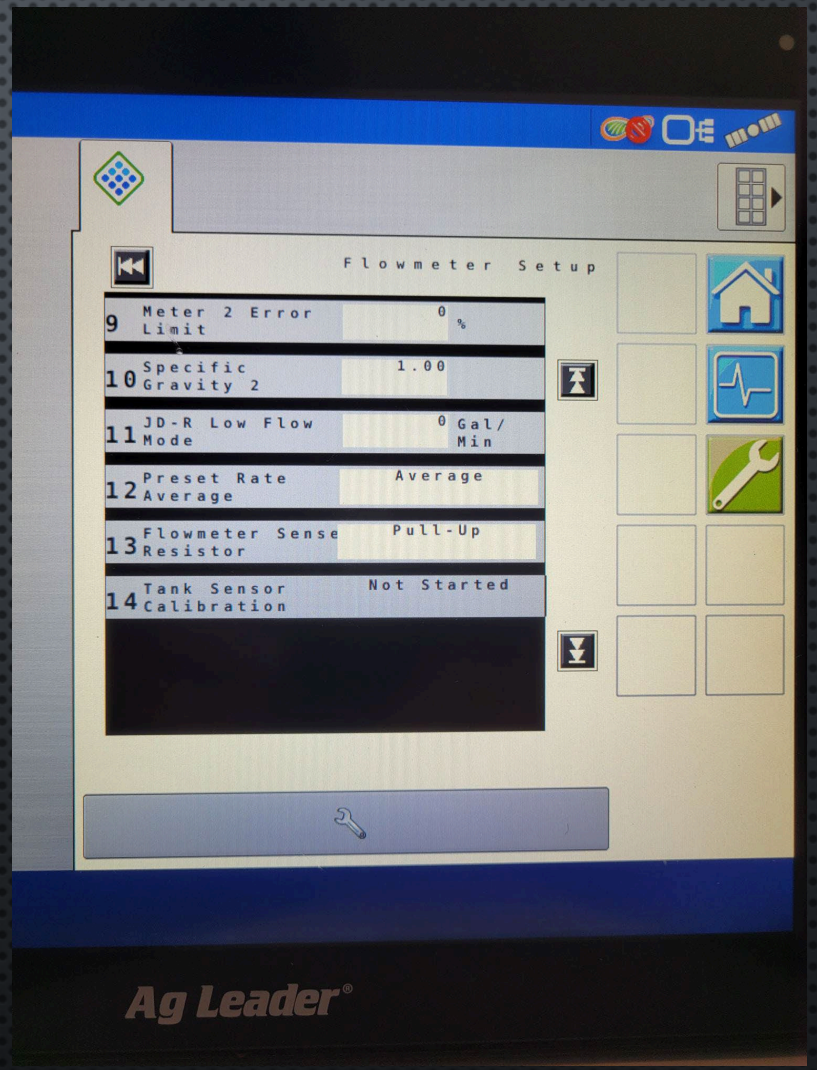
JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

- Flow Menu
  - Flowmeter setup
  - Deere flowmeters typically have a steel tag located on the flowmeter that indicates the meter cal
  - In this example, the number on the tag was 572.0
  - Enter the number less the decimal point
  - Meter 2 is not used



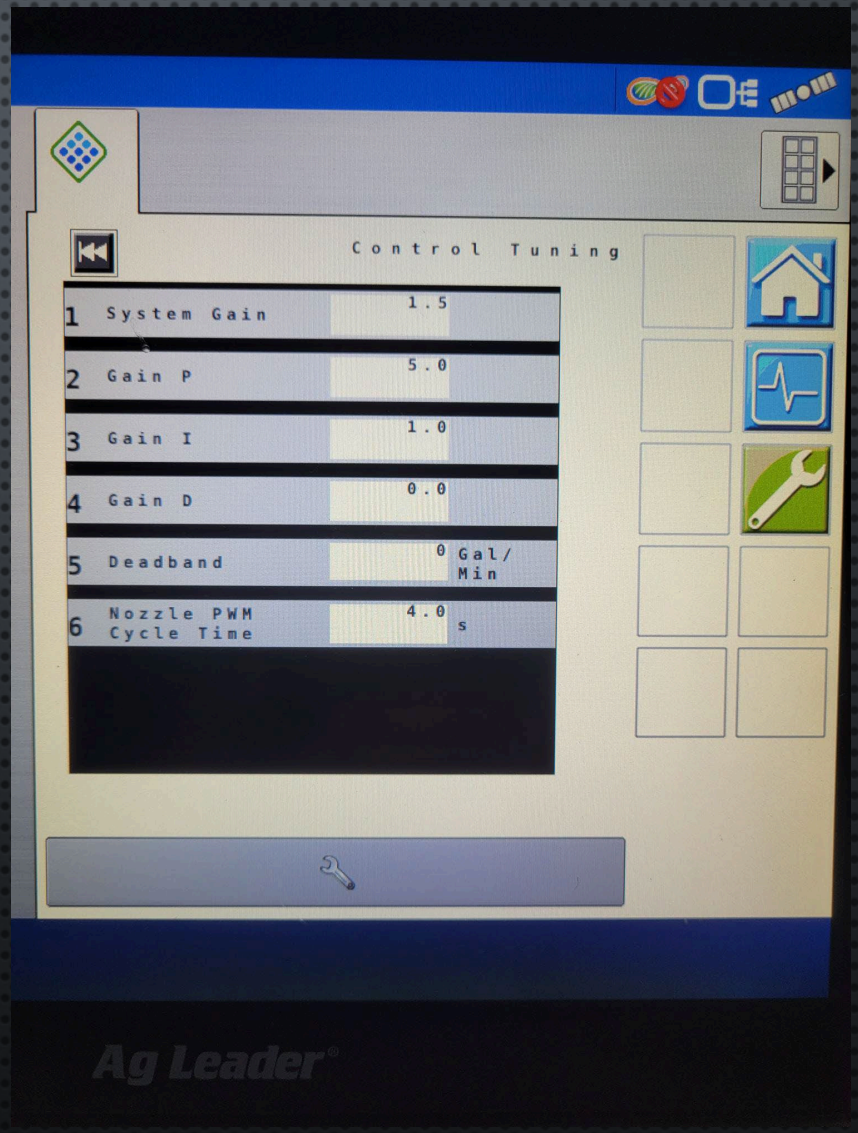
JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

- FLOW MENU
  - FLOWMETER SETUP (PAGE 2)
  - METER 2 IS NOT USED
  - FLOWMETER SENSE RESISTOR MAY NEED TO BE SET TO PULL-DOWN ON SOME MACHINES



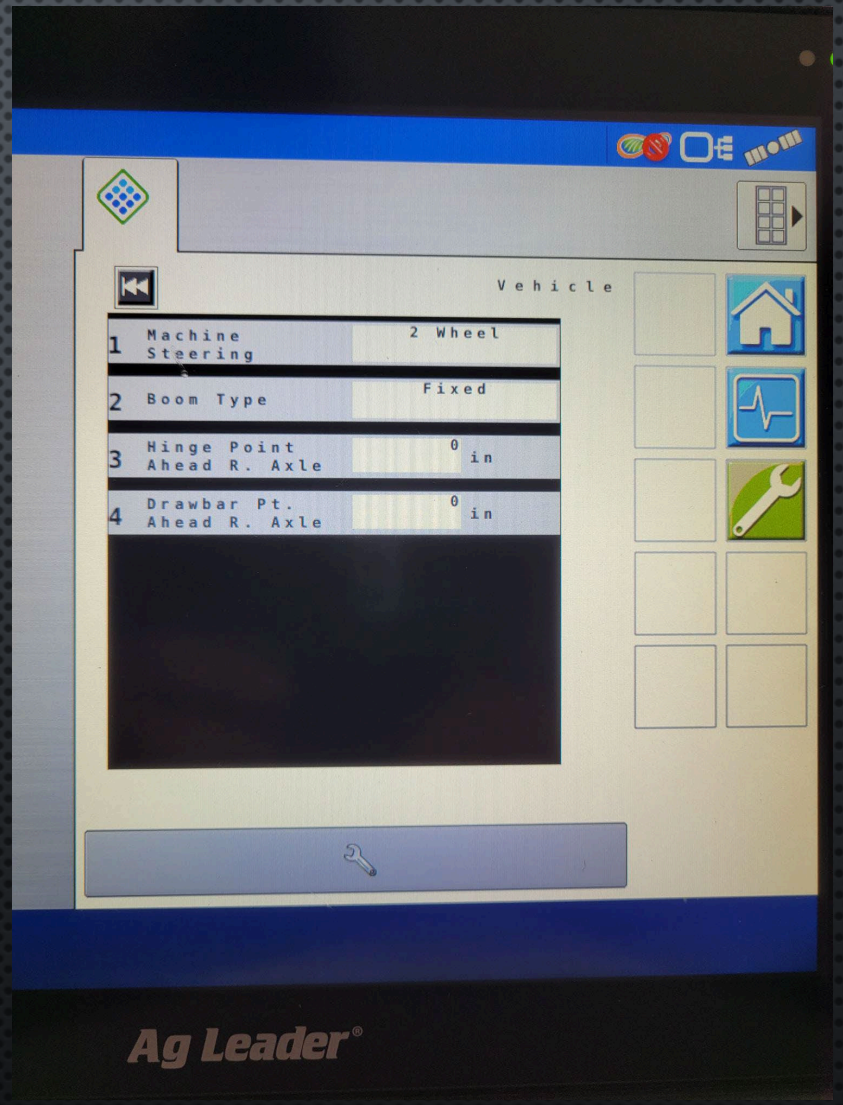
JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

- Flow Menu
  - Flow control tuning
  - Adjust system gain up/down to achieve rate control performance



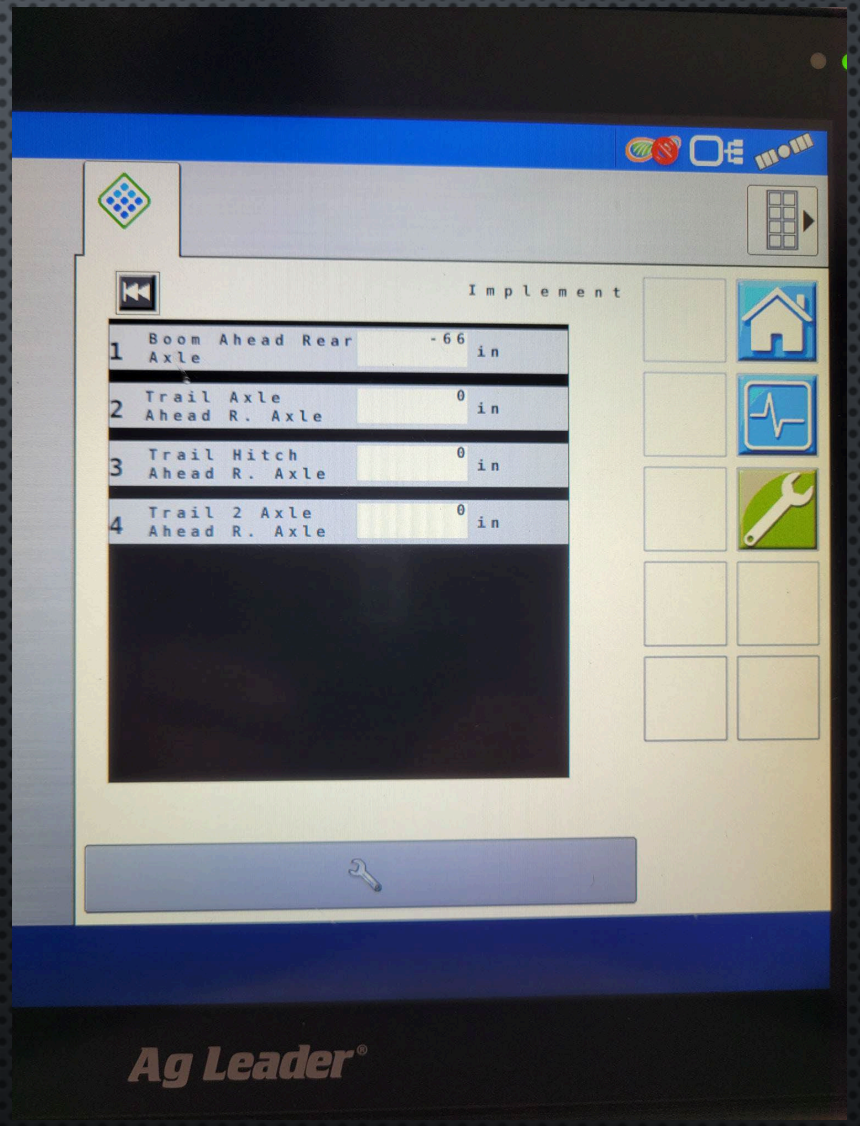
JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

- Navigation Menu
  - Vehicle



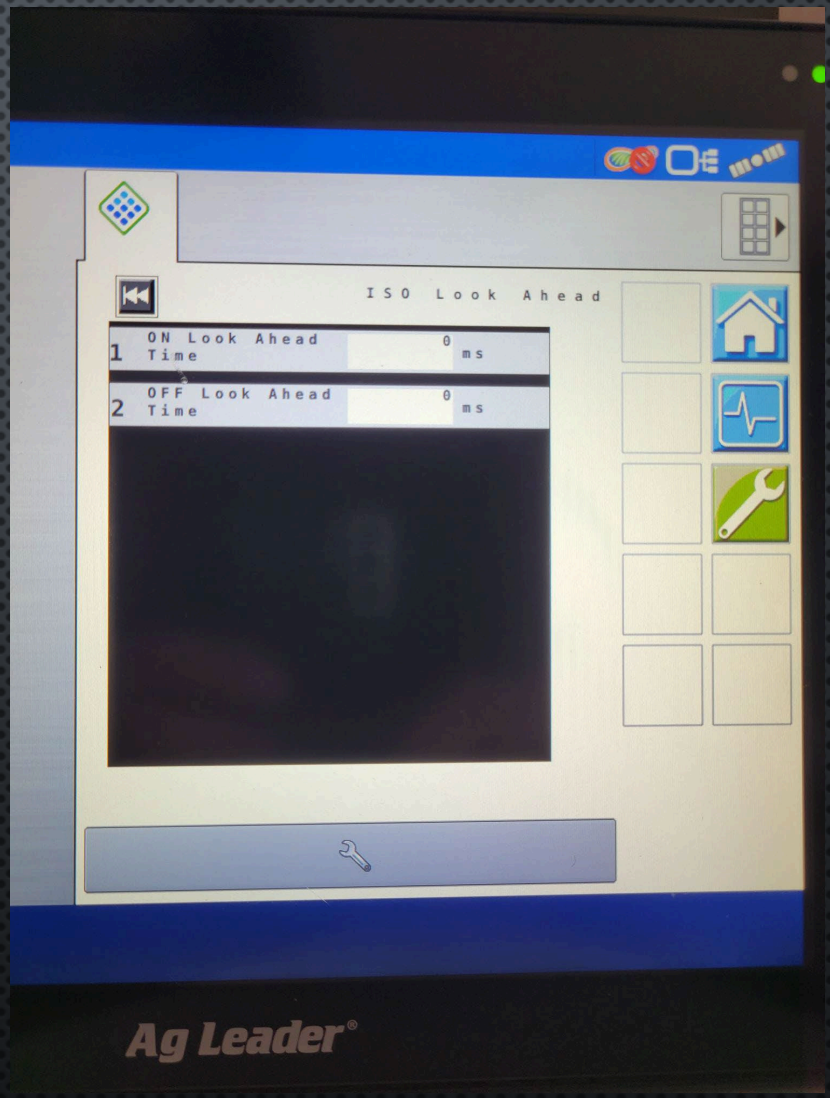
JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

- Navigation Menu
  - Implement
  - Measurements shown are from a 4830
  - Be sure both the display and the PP3 system have the same and accurate measurements!



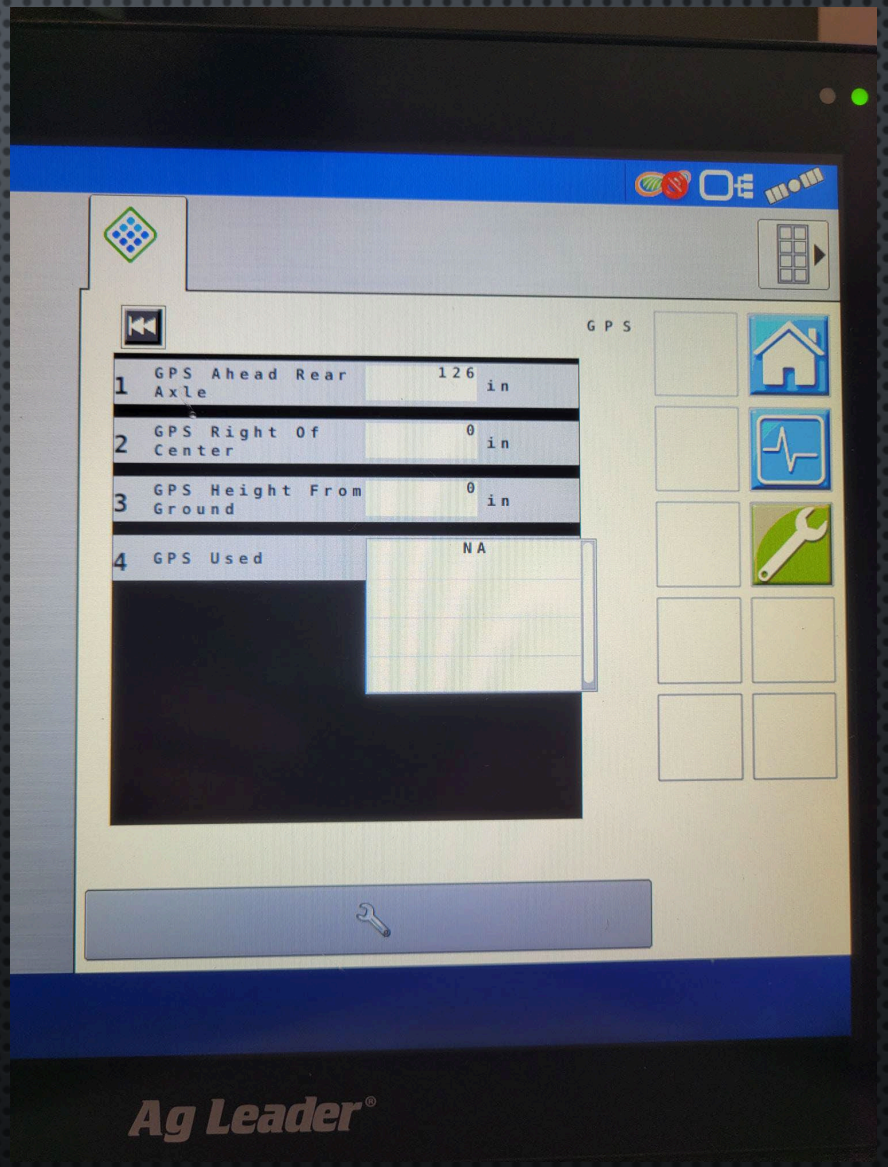
JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

- Navigation Menu
  - ISO Look Ahead
  - Set to zero and adjust look ahead in display swath control settings menu



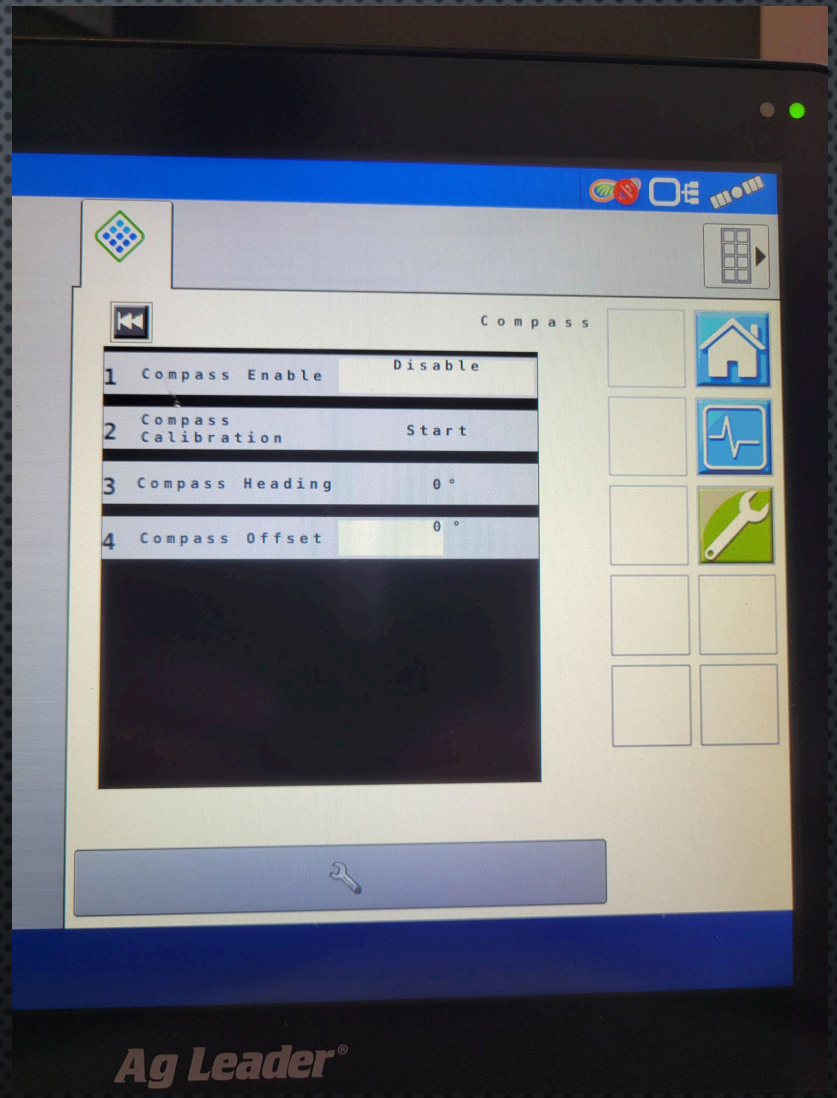
JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

- Navigation Menu
  - Implement
  - Measurements are for a JD 4830
  - Be sure both the display and the PP3 system have the same and accurate measurements!
  - GPS used will need to be set correctly for the source of GPS given
  - John Deere GPS fed into a JD display will not export GPS via ISOBUS, we will need to set the "GPS Used" to "SERIAL" or "NMEA 1083"
  - See additional documentation below for setting up GPS on the JD display



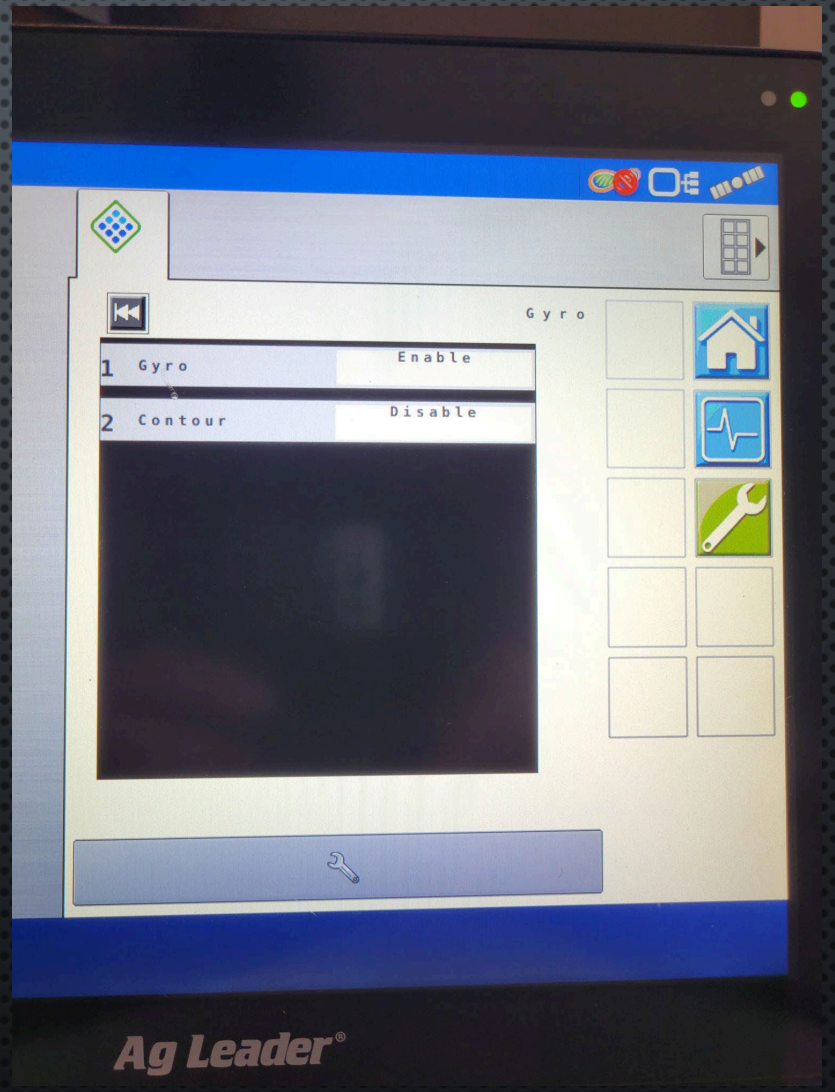
JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

- NAVIGATION MENU
  - COMPASS
  - HAVE NOT BEEN UTILIZING COMPASS



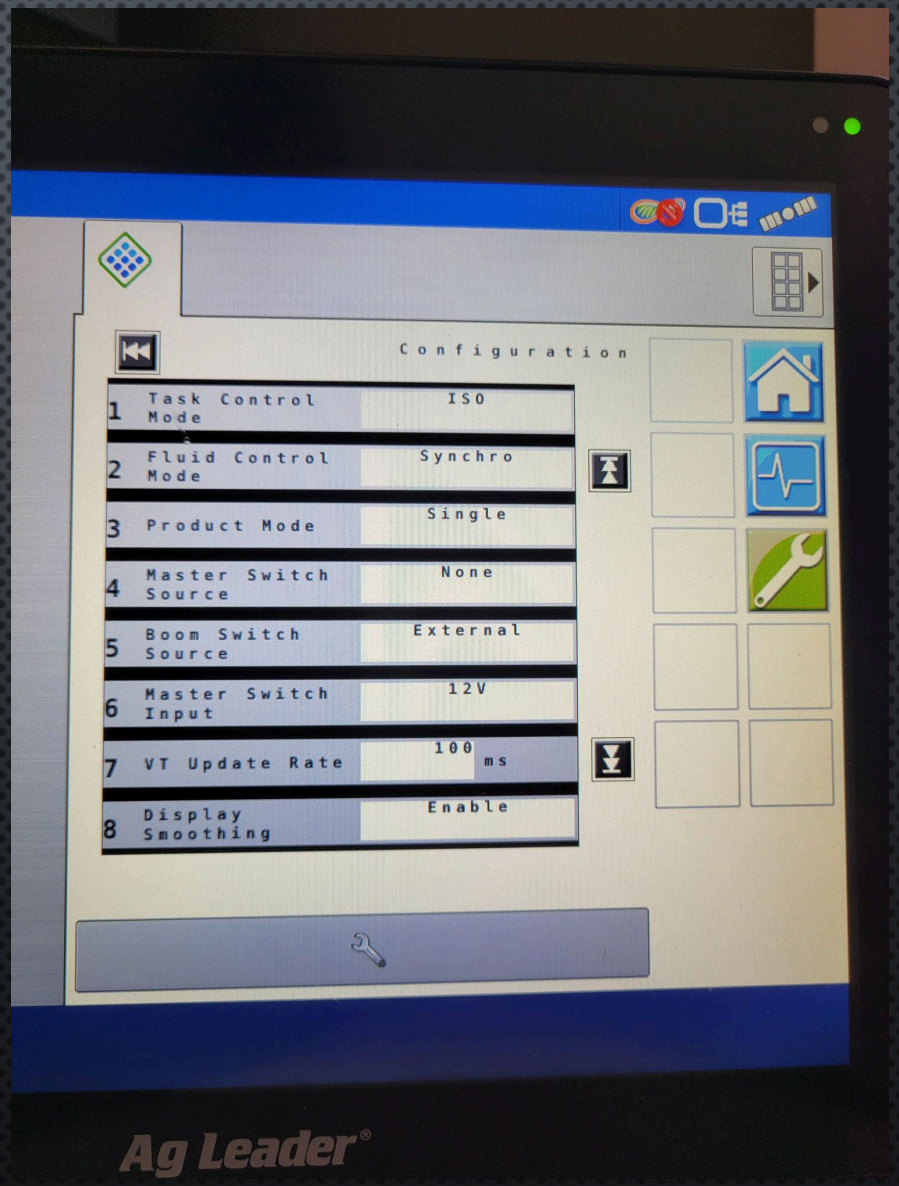
JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

- Navigation Menu
  - Gyro



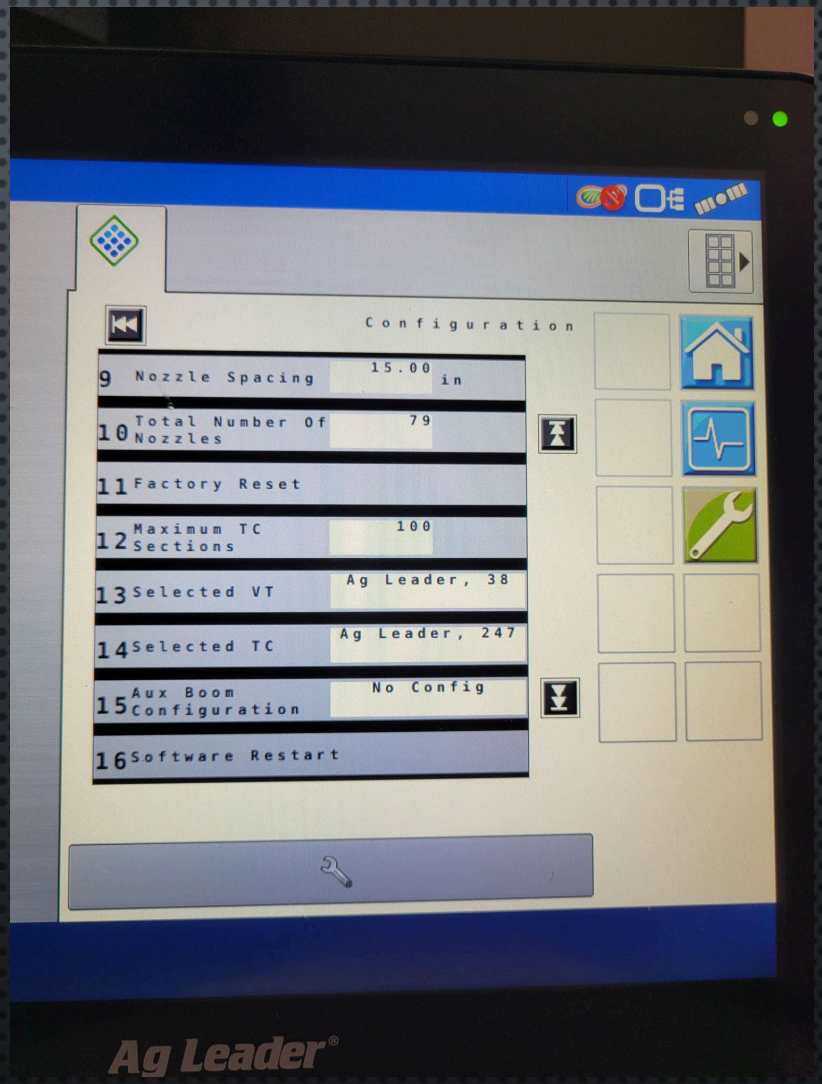
JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

- INITIAL SETTINGS
  - CONFIGURATION



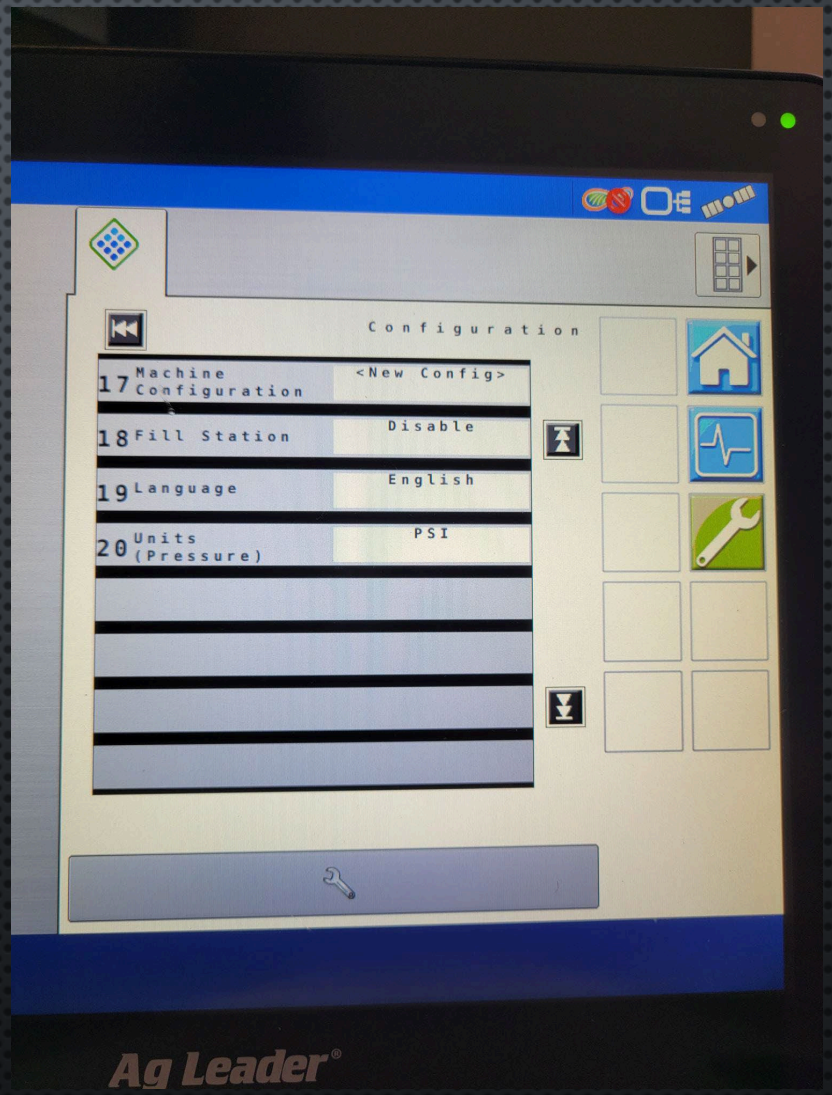
JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

- INITIAL SETTINGS
  - CONFIGURATION (PG 2)
  - SEE MORE DETAILS ABOVE REGARDING SETTINGS FOR THIS PAGE
  - SELECTED VT AND TC WILL REFLECT WHICH DISPLAYS ARE AVAILABLE ON THE ISOBUS



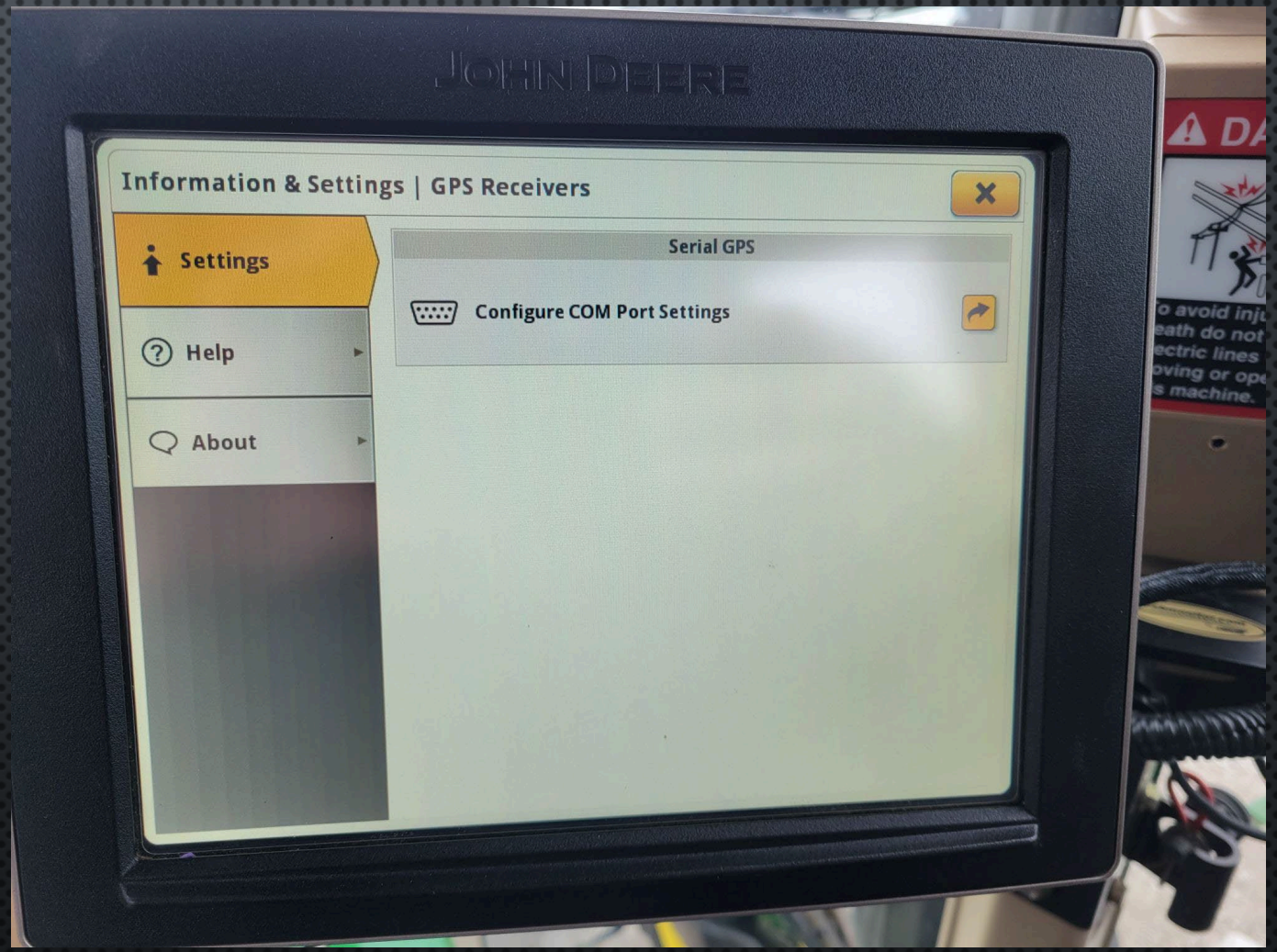
JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

- INITIAL SETTINGS
  - CONFIGURATION (PG 3)
  - FOR JOHN DEERE 30 SERIES MACHINES, SET THE "FILL STATION" LINE ITEM TO "EXTERNAL" TO ALLOW USE OF THE EXISTING PUMP SWITCHES ON THE DASH AND RELOAD STATION



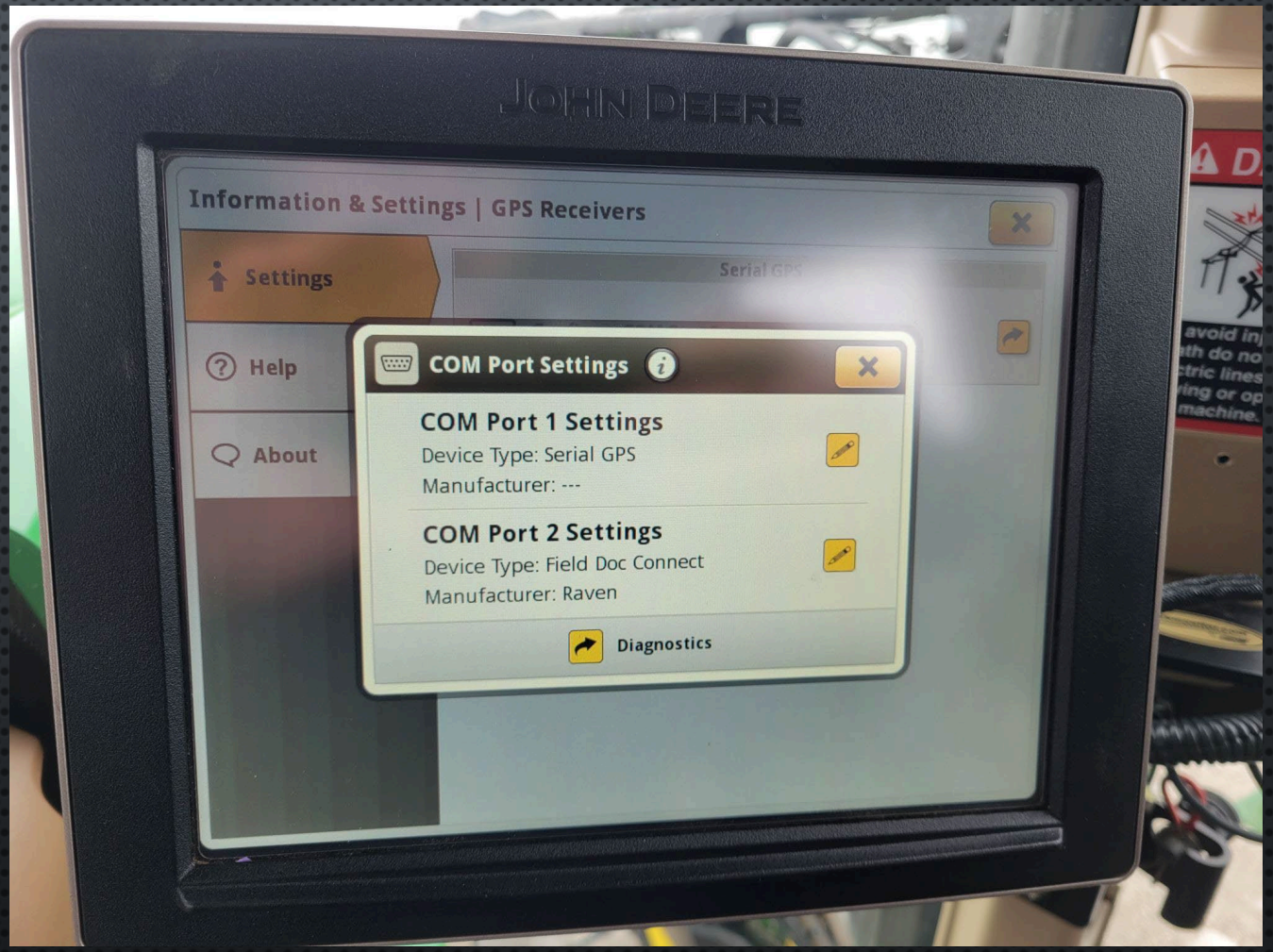
JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

- JD 4640 DISPLAY SERIAL GPS CONFIGURATION
  - NAVIGATE TO COM PORT SETTINGS



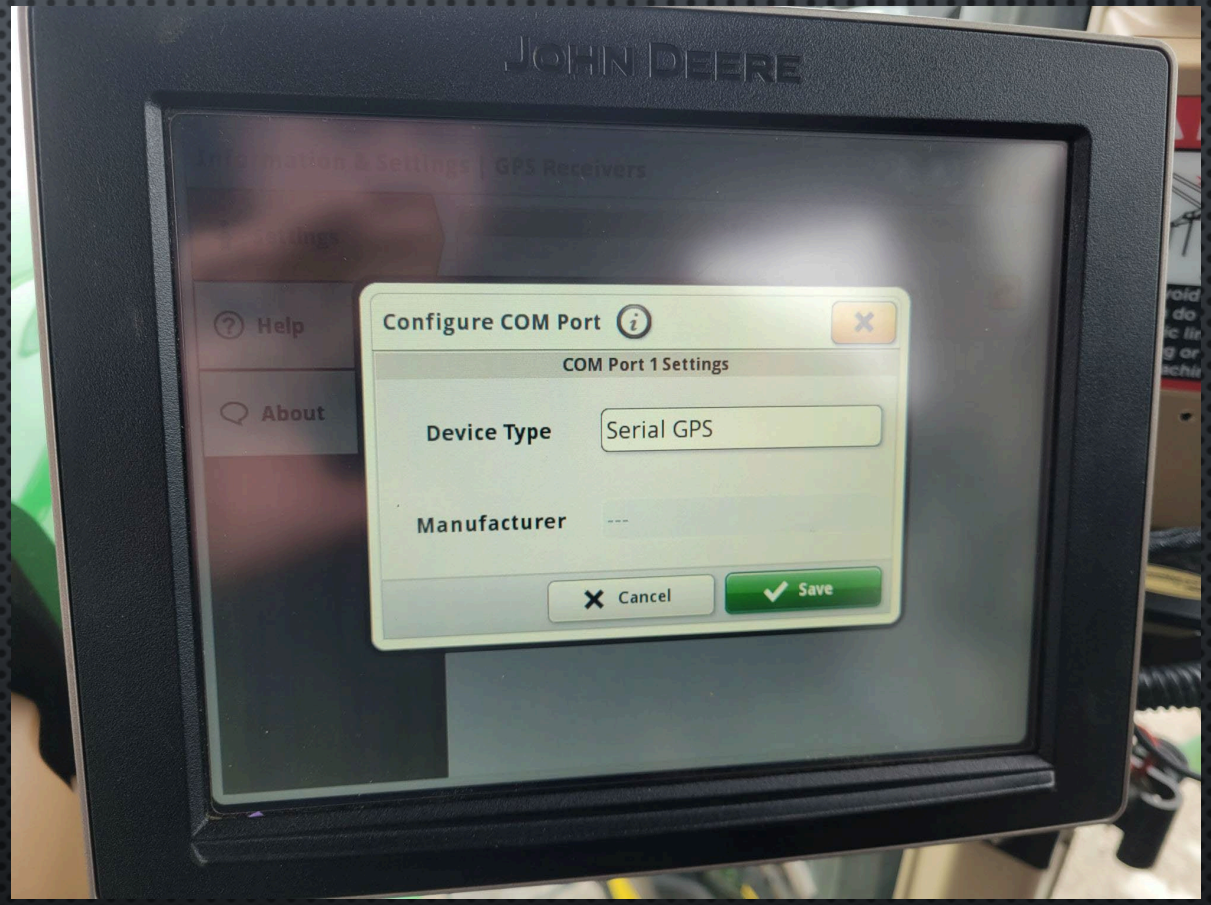
JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

- JD 4640 DISPLAY SERIAL GPS CONFIGURATION
  - EDIT COM PORT 1 SETTINGS



JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

- JD 4640 DISPLAY SERIAL GPS CONFIGURATION
  - CONFIGURE COM PORT 1 TO ACCEPT SERIAL GPS



JOHN DEERE 30 SERIES SYSTEM SETUP/PROGRAMMING

- JD 4640 DISPLAY SERIAL GPS CONFIGURATION
  - NAVIGATE TO THE STARFIRE APP AND SET SERIAL PORT OUTPUT TO MATCH SETTINGS SHOWN HERE.
  - BAUD AND OUTPUT RATE MUST BE SET TO 19200 AND 5HZ IN ORDER FOR THE DISPLAY TO RECEIVE IT