SETUP GUIDE

JOHN DEERE RATE CONTROLLER 2000

FAST SHUT OFF - SINGLE LIQUID – SINGLE SWATH

DOCUMENT NO.	MAN0021
REVISION	B
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Overview

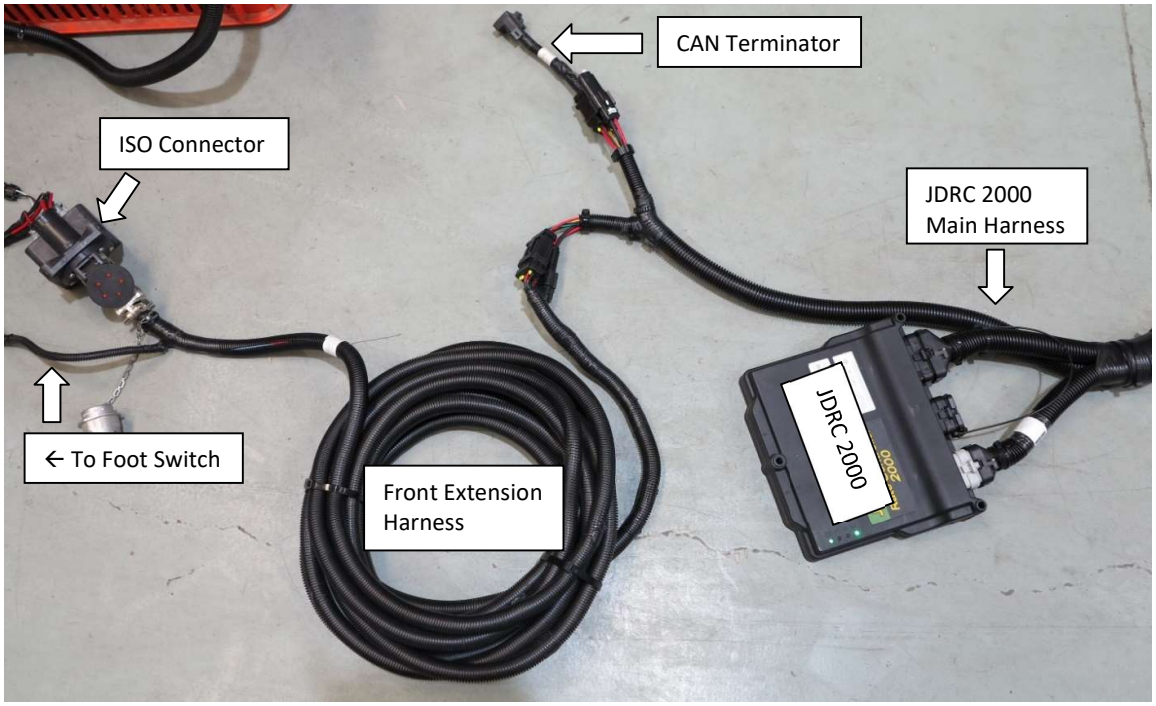
This document provides instructions for setting up a Liquid Systems (SA) Rate Control Module with a John Deere Greenstar Display using a John Deere Rate Controller 2000 (JDRC 2000). The scenario covers setup of a single liquid system without section control where it is the one and only product being controlled by JDRC 2000.

This document should be read in conjunction with the JDRC 2000 Operators Manual.

Configuration Prerequisites

Before the liquid system can be configured in the Greenstar Display (2630 or newer), following actions need to be completed.

- Physical installation of Liquid Systems (SA) Rate Control module including tank plumbing.
- Installation and connection of JDRC 2000 to the Greenstar Display with Front Extension Harness and Foot Switch.
- Installation of Height Switch on planting implement if required.



Physical Connection to Liquid Systems module

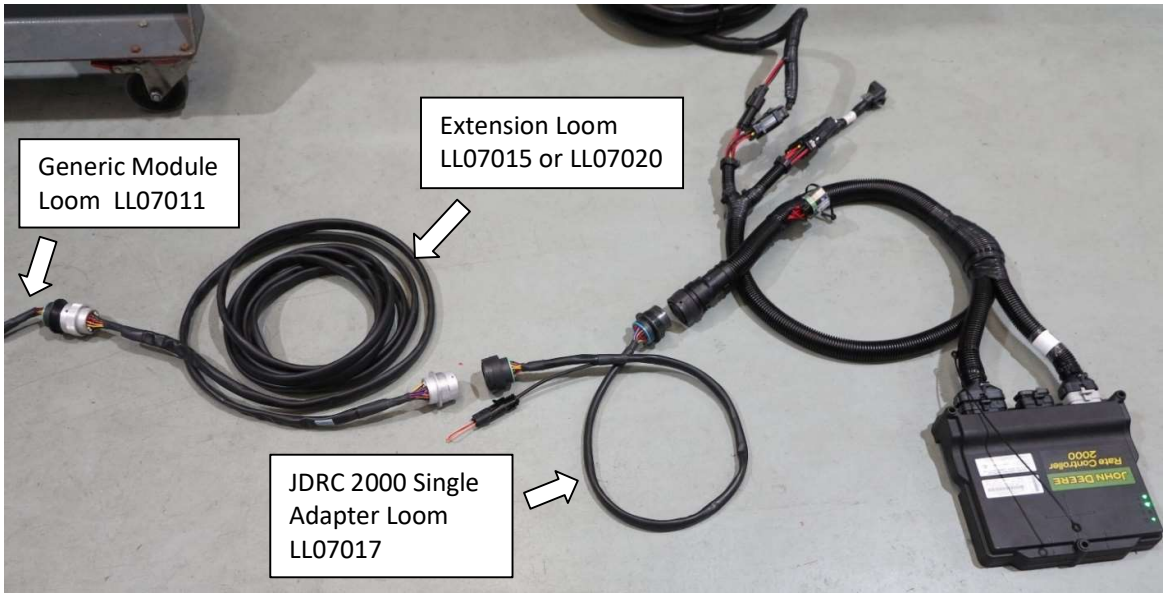
Connect Liquid Systems (SA) module to the JDRC 2000 with wiring looms supplied.
Liquid Systems (SA) looms available for single liquid set up without section control are:

Part No.	Name		Description
LL07017	JDRC 2000 Single Adapter Loom (47 pin)		Adapter that connects to 47 pin connector on JDRC 2000 Main Harness.
LL07011	Generic Module Loom (5m)		Connects to individual device connectors on LQS pump module. Connects to LL07017 Adapter Loom via 23 pin circular connector.
LL07015 (optional)	Generic Module Loom Extension (6m)		Extensions of Generic Module Loom for when additional length is required from LQS pump module to JDRC 2000.
LL07020 (optional)	Generic Module Loom Extension (12m)		

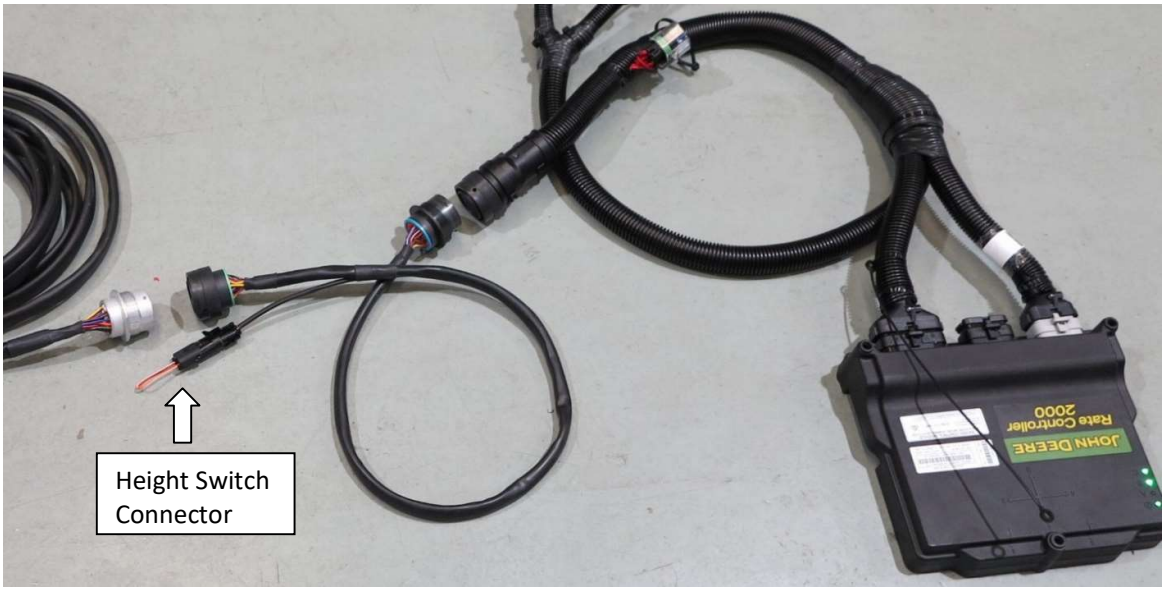
1. Connect Generic Module Loom (LL07011) to device connectors (regulating valve signal and power, flow meter, pressure sensor and RPM sensor) on Liquid Systems (SA) module and route towards JDRC 2000.

2. Connect and route Extension Loom (LL07015 or LL07020) to reach JDRC 2000 if required for the routing distance.

3. Connect JDRC 2000 Single Adapter Loom (LL07017) to the Extension Loom and to the JDRC 2000 Main Harness.



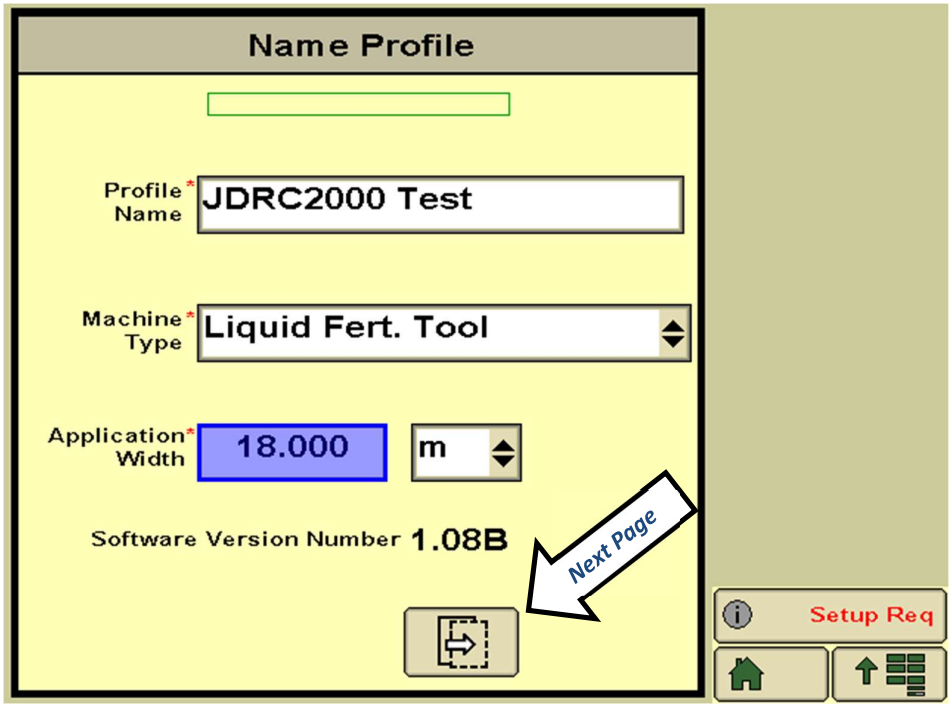
4. If installed, connect Height Switch to connector on Adapter Loom (LL07017).



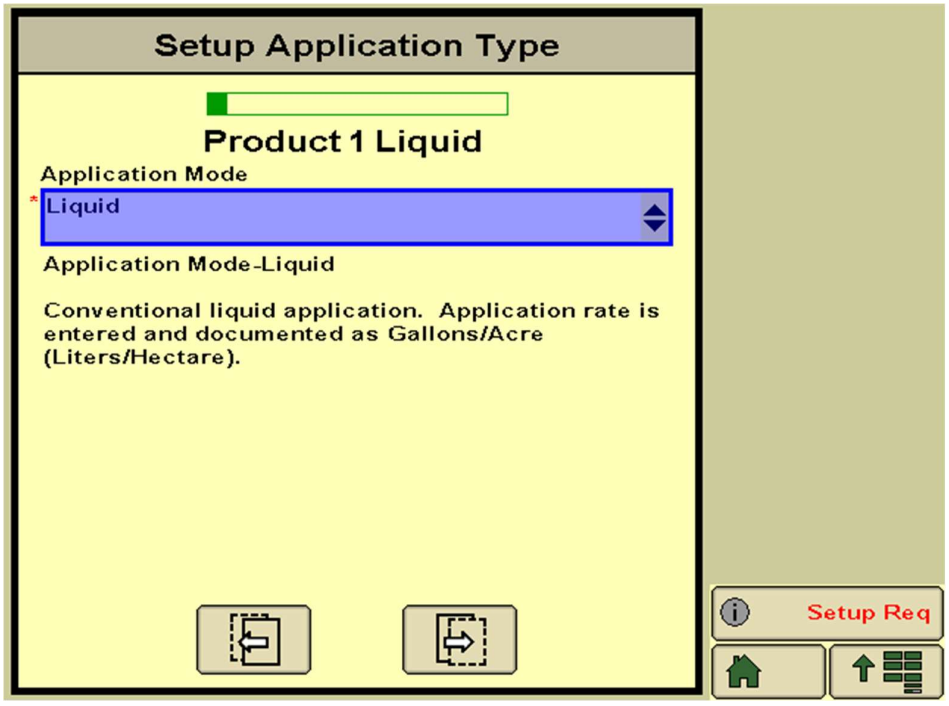
Rate Controller 2000 Setup

Enter Rate Controller Setup. Select **New Profile** from drop down menu and press **Accept** button.

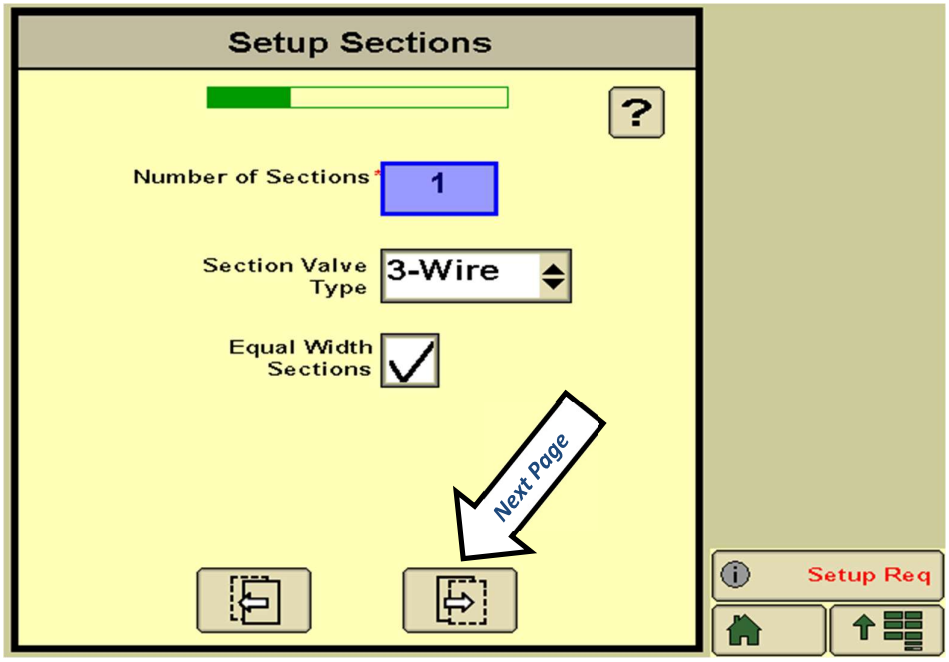
Assign an appropriate **Profile Name**. Select **Liquid Fert Tool** from Machine Type drop down menu. Enter effective operating width of implement and press **Next Page** button (right arrow).



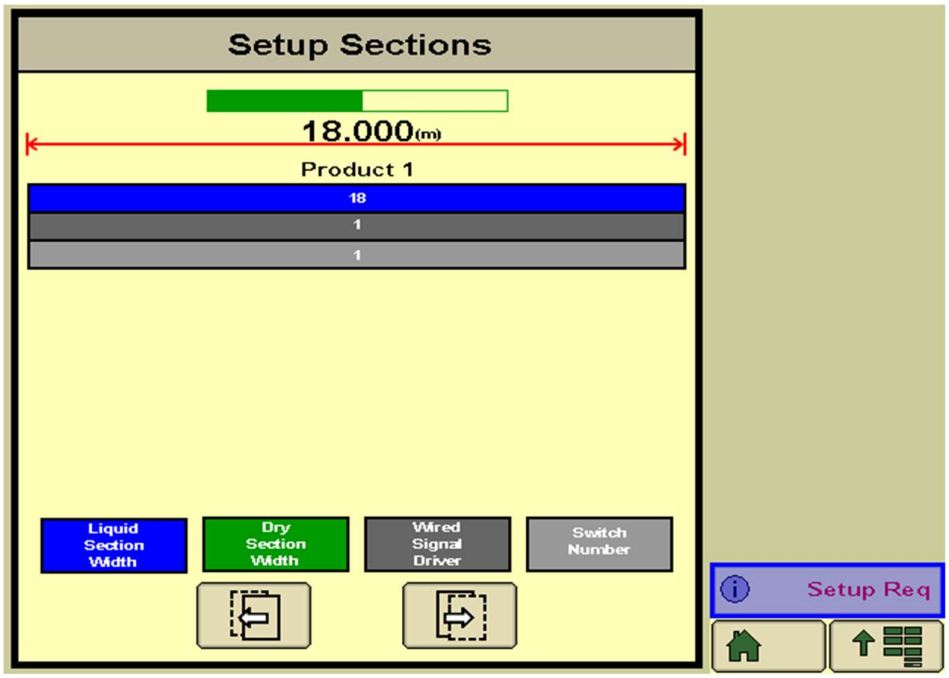
Select **Liquid** from Application Mode drop down menu. Press **Next Page** button (right arrow).



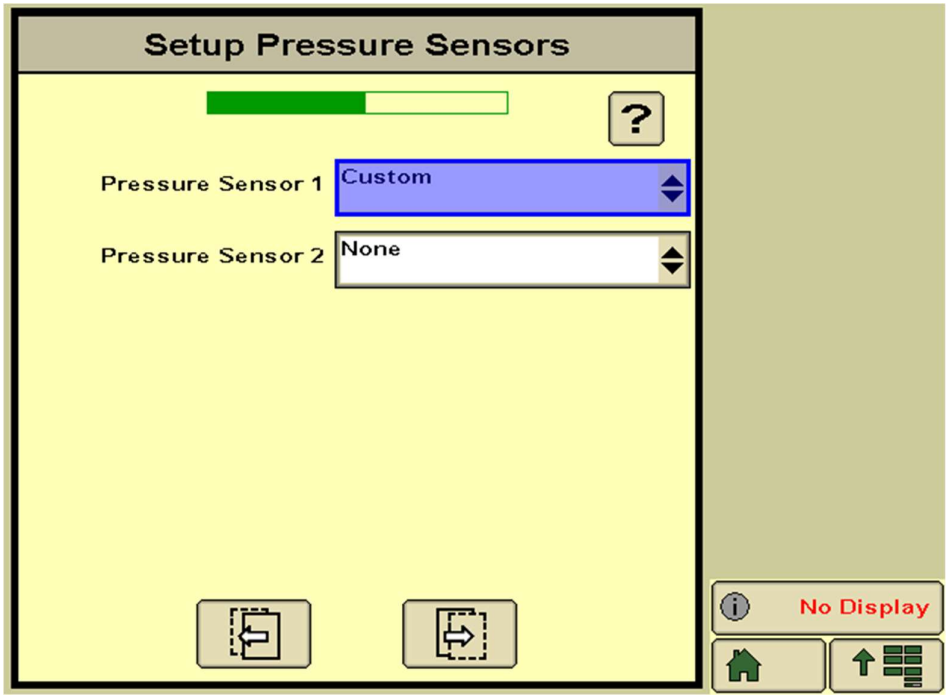
Setup single section as below. Press **Next Page** button (right arrow). If required, press **Previous Page** button (left arrow) to go back and re-enter data.



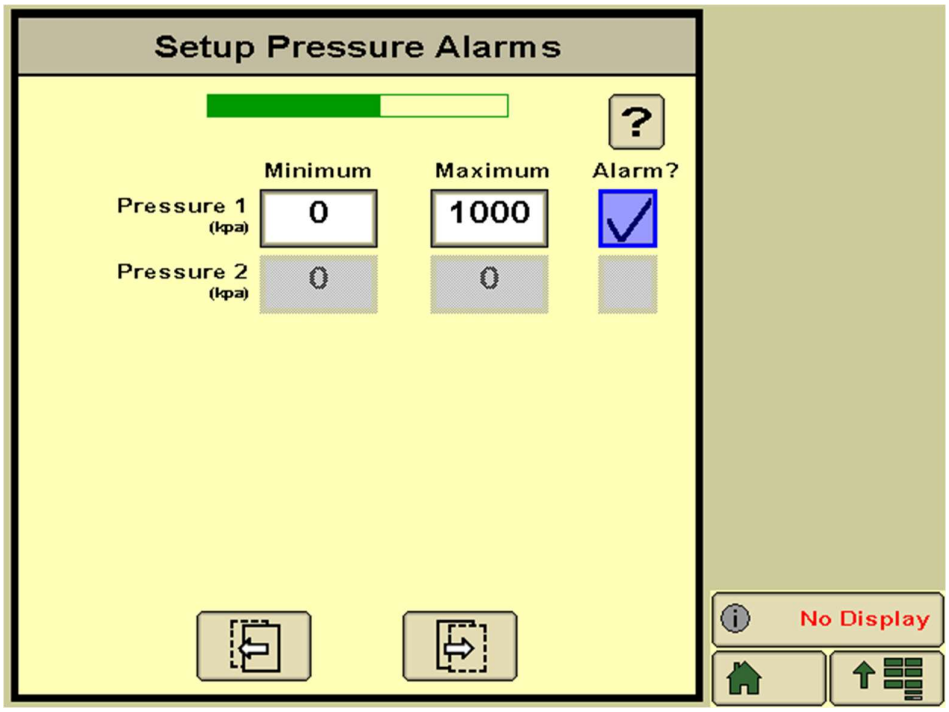
Review section set up data and press **Next Page** button (right arrow).



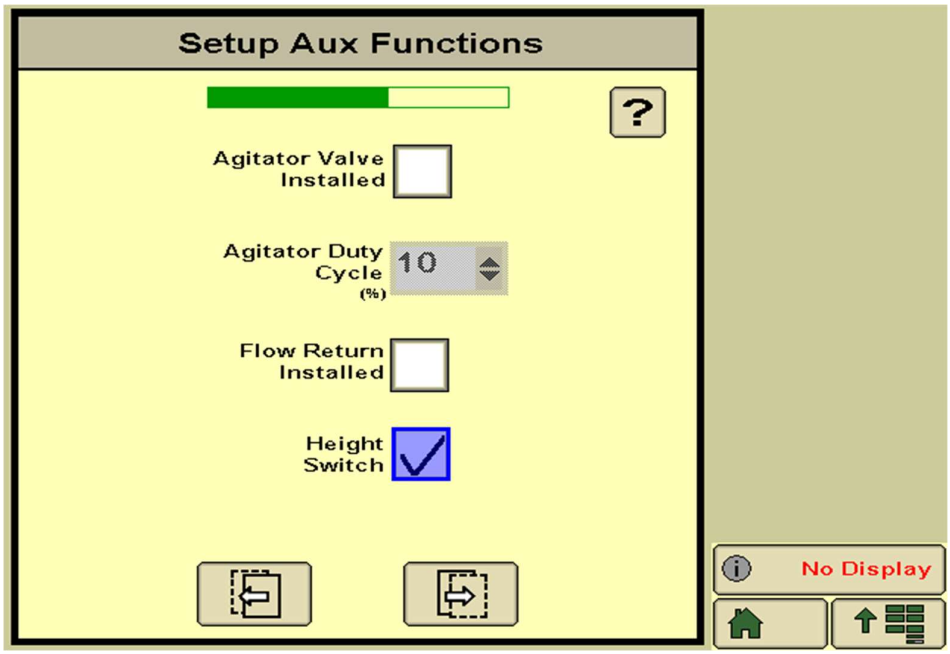
Select **Custom** from Pressure Sensor 1 drop down menu.
Ignore any warnings at this stage.



Set Maximum pressure alarm at **1000 kPa** (or 145 psi).

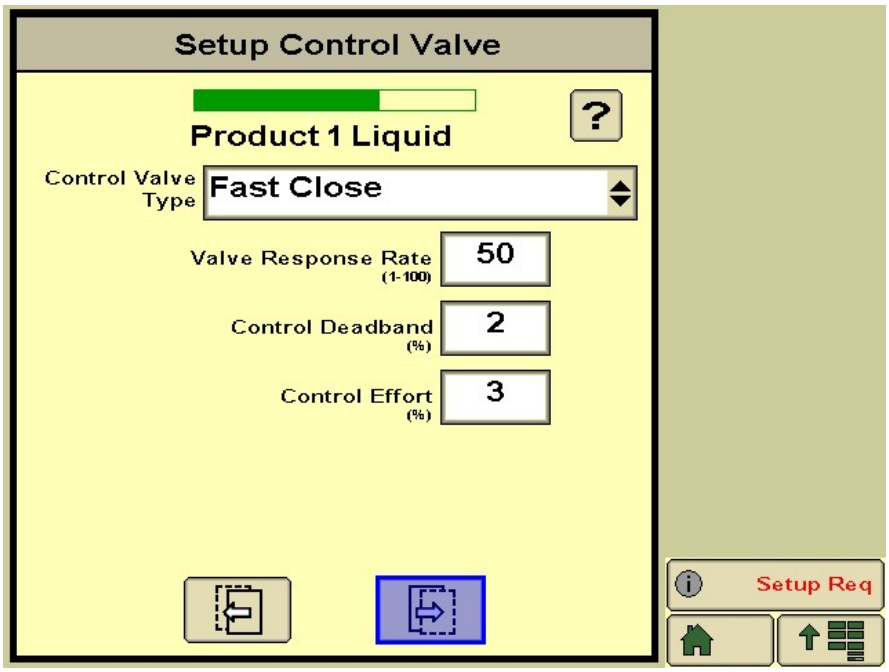


If installed, enable Height Switch and press **Next Page** button.



Enter following Control Valve settings as a starting point for KZ Valve. If rate control is erratic, these settings can be adjusted later. For **SPIKER** module, enter **Valve Response Rate** of **30**.

For **Teejet Valve,** enter **Valve Response Rate** of **90**



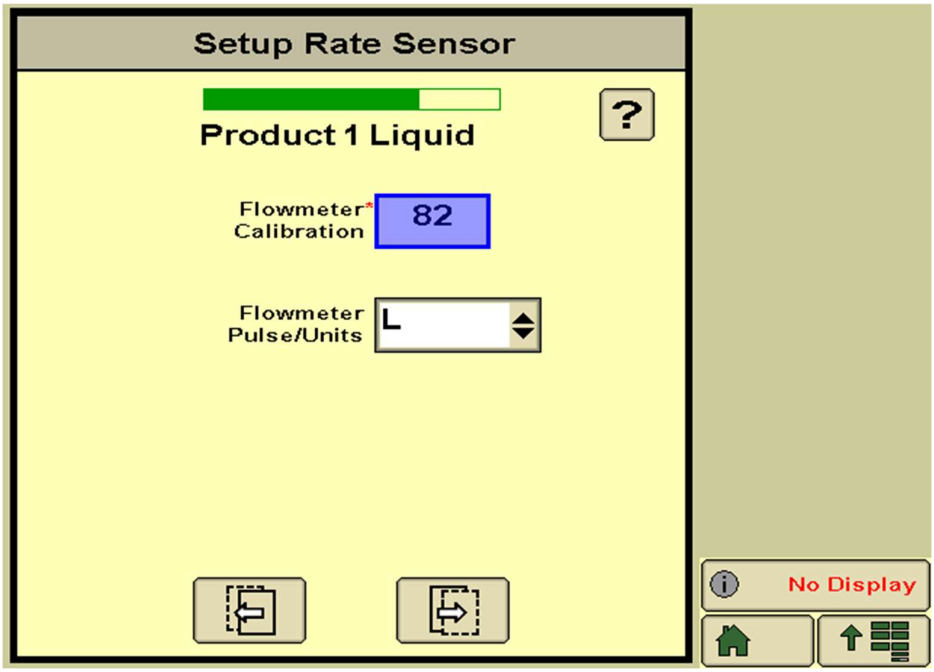
LQS Modules are built with 2 different Fast-Shutoff Valves, the images below show the difference between the KZ Valve and Teejet Valve.

KZ Valve

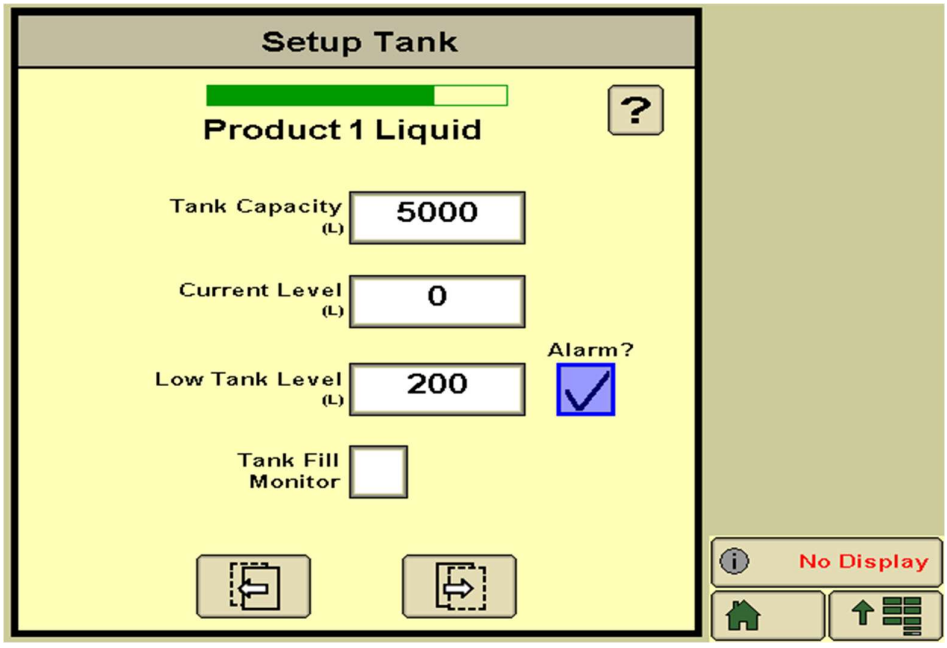
Teejet Valve

Enter Flowmeter Factory Calibration number as below.

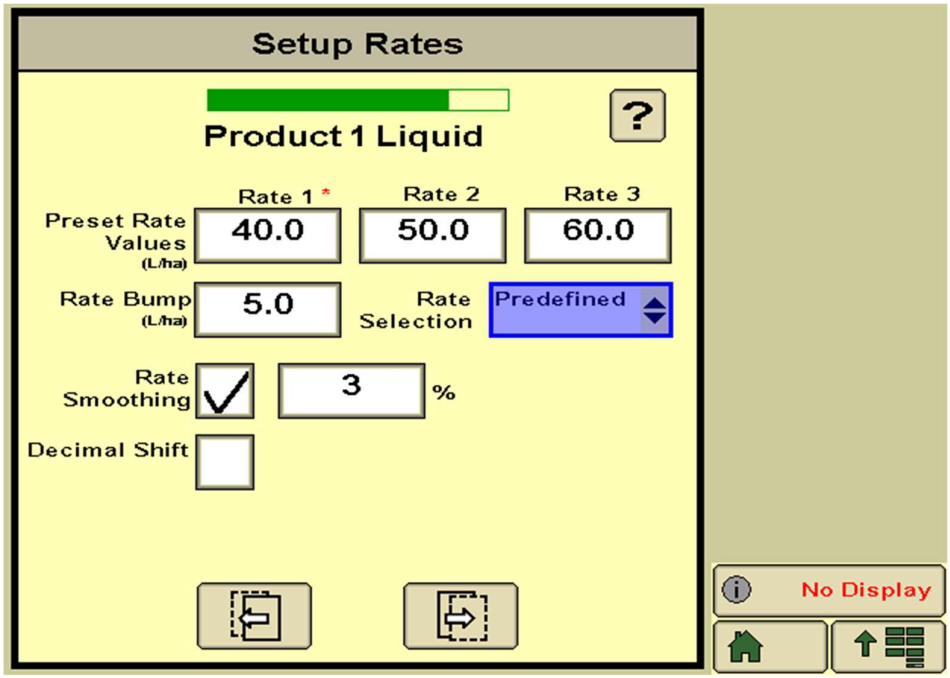
Flowmeter	Pulses/Litre	Pulses/US Gal	Pulses/IMP Gal
Teejet 801	82	310	373
ARAG Orion 2.5-50L/Min	1200	4542	5455
ARAG Orion 1-20L/Min	3000	11355	13638
ARAG Orion 0.5-10L/Min	6000	22710	27277



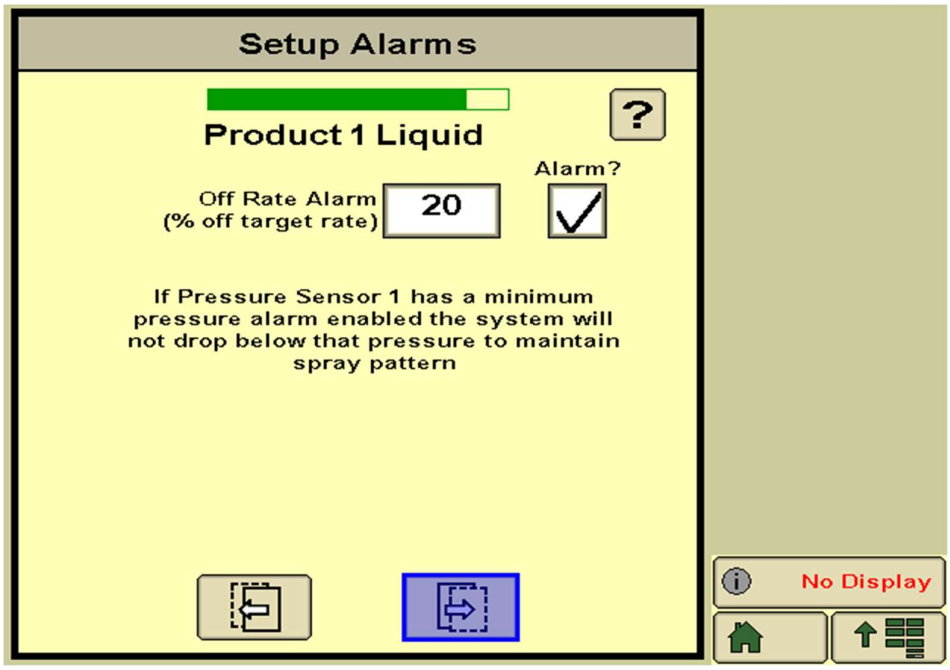
Enter Tank Capacity, Level and Alarms as required.



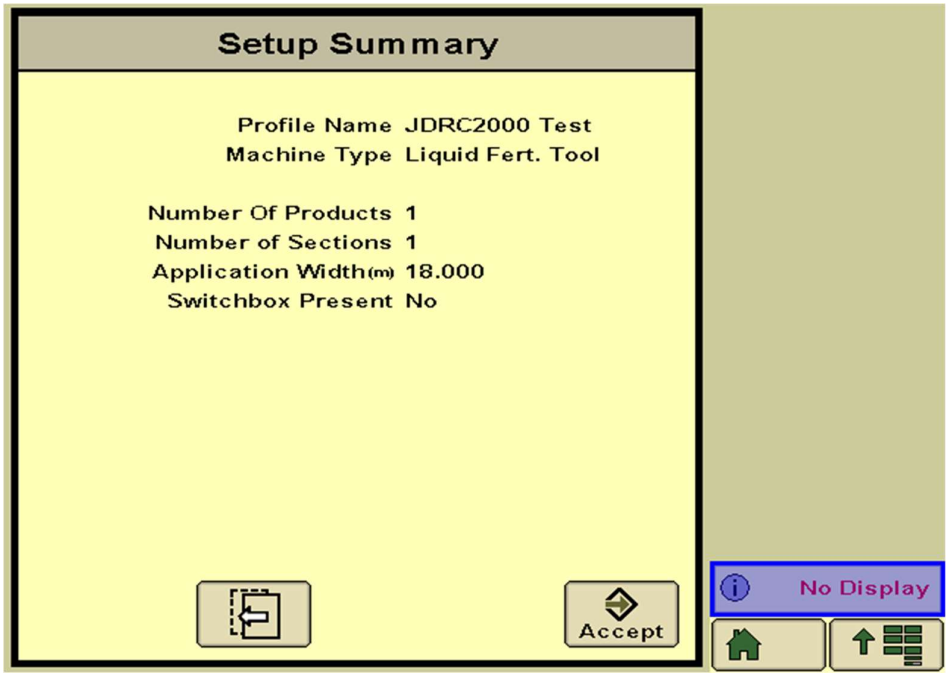
Enter Target Application Rates as required.



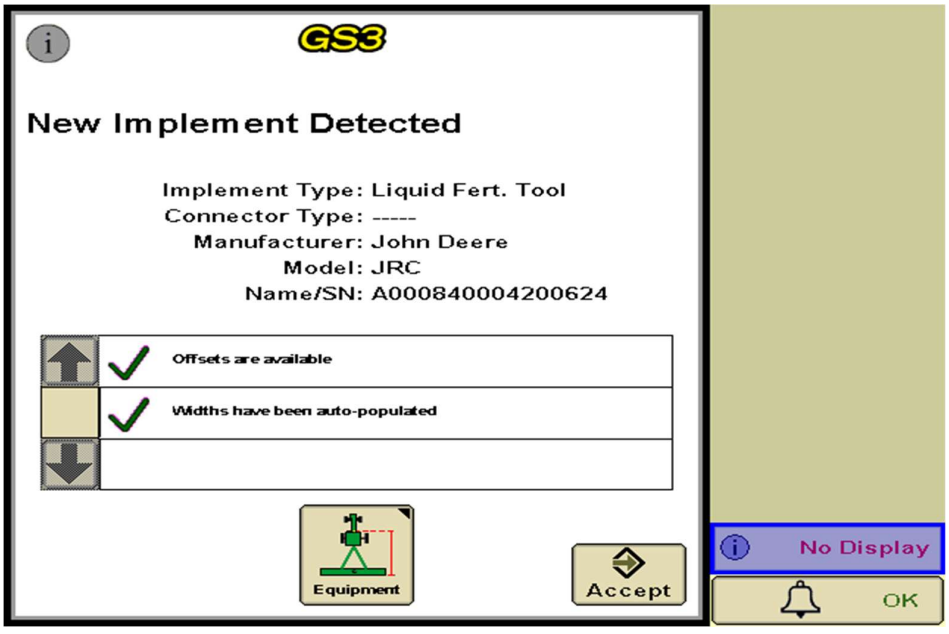
Enter Off Target Rate Alarm as required.



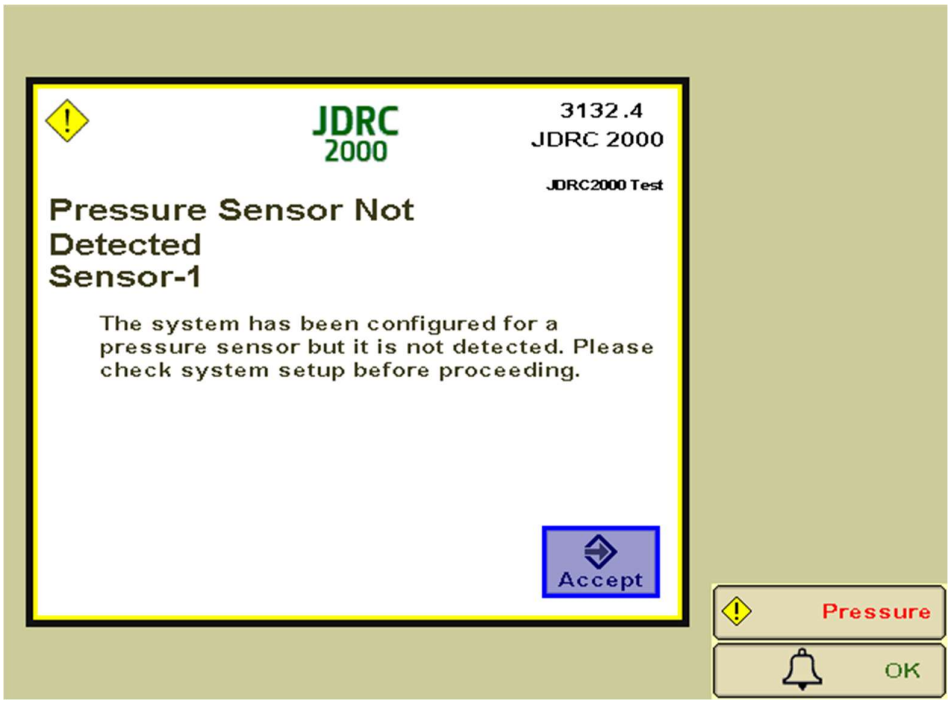
Review Setup summary. Press **Accept** or Previous Page button (left arrow) to edit.



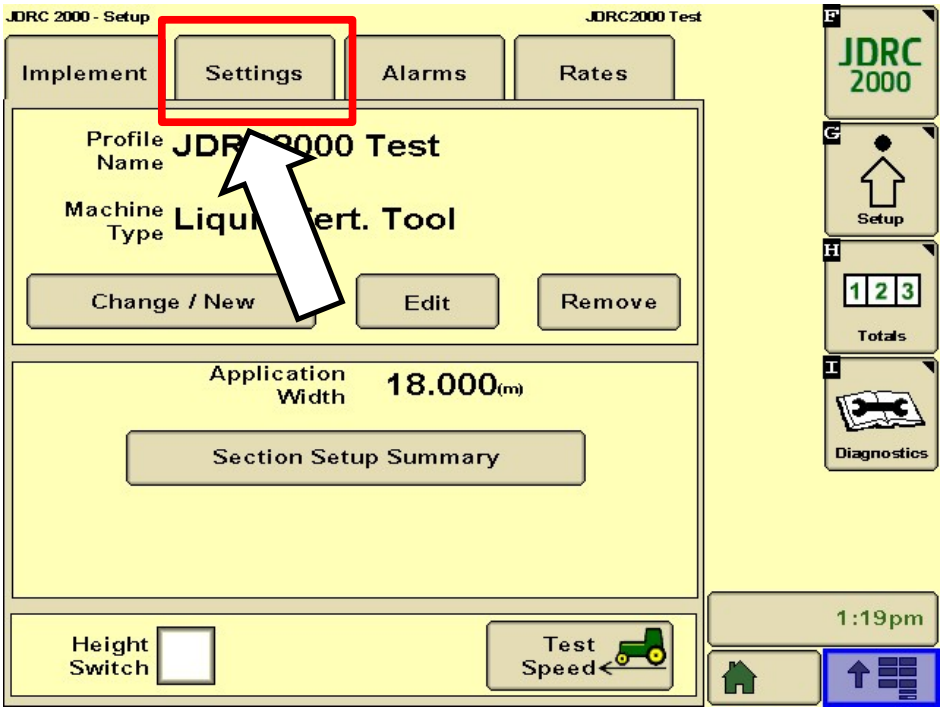
At this stage of set up, the following screen will be displayed. Press **Accept**.



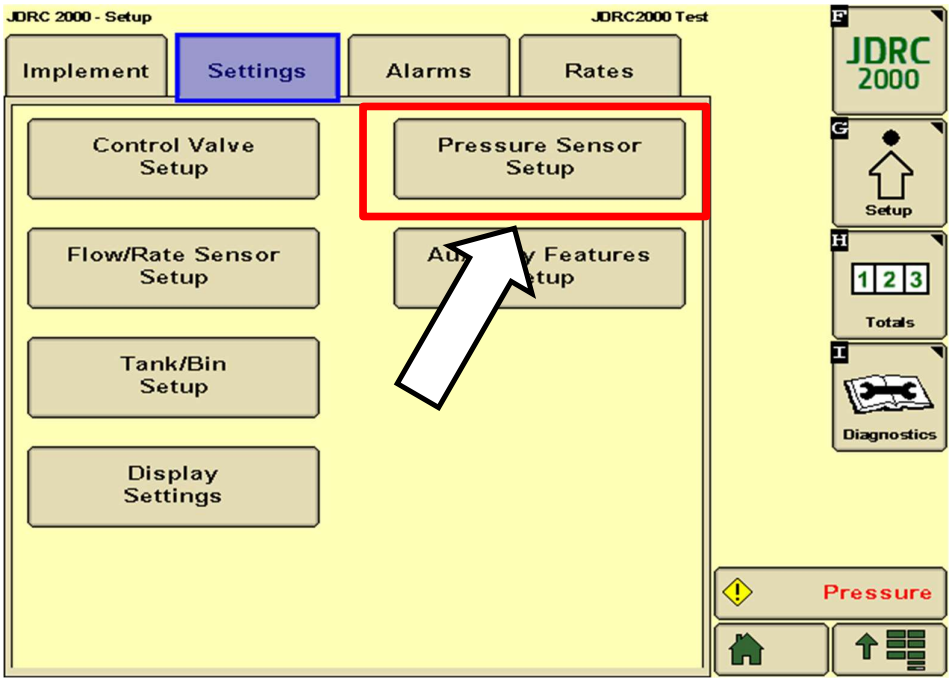
IGNORE THIS WARNING. Press **Accept** to proceed to pressure sensor set up.



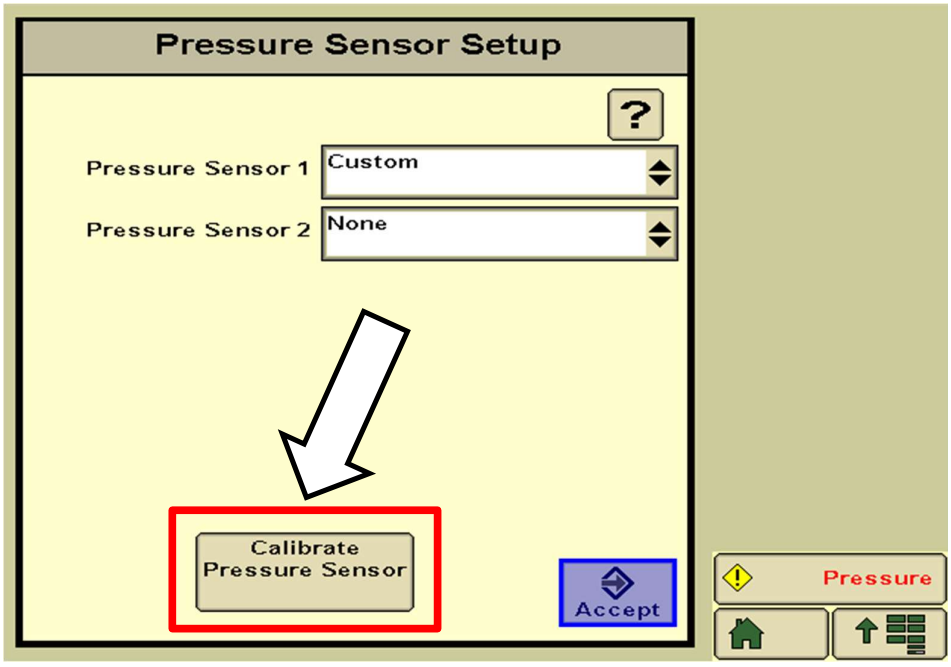
Select **Settings** tab from the Set up screen.



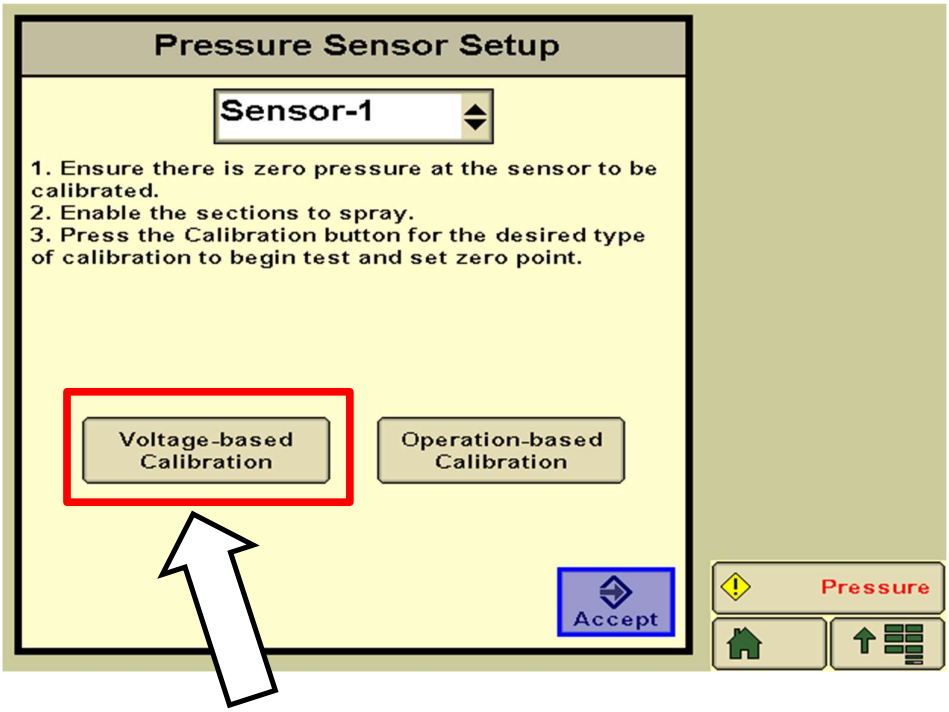
Select **Pressure Sensor Setup**.



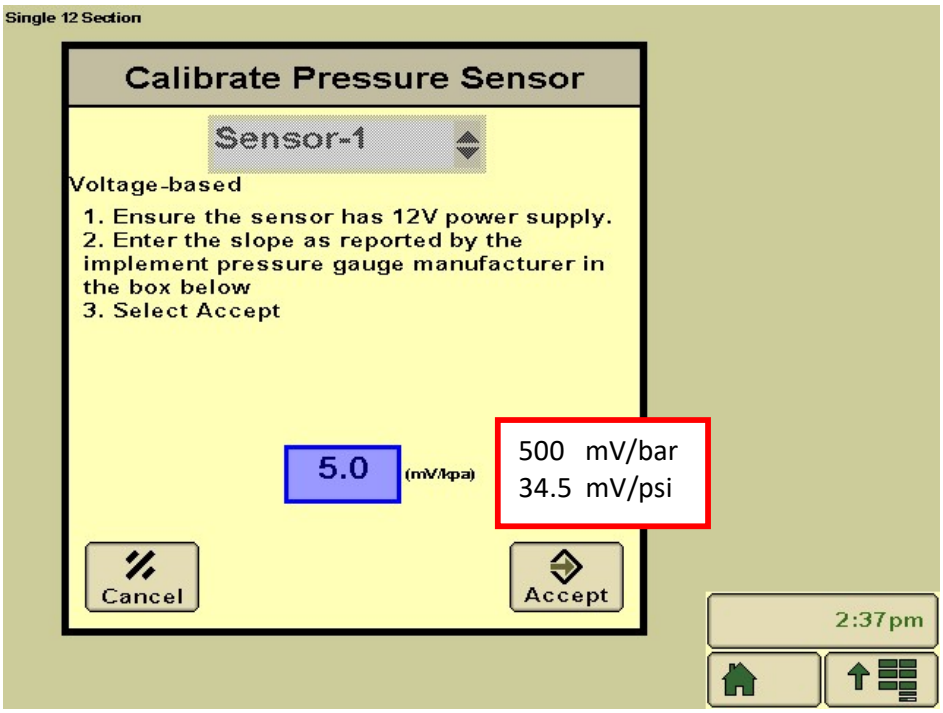
Select **Calibrate Pressure Sensor**



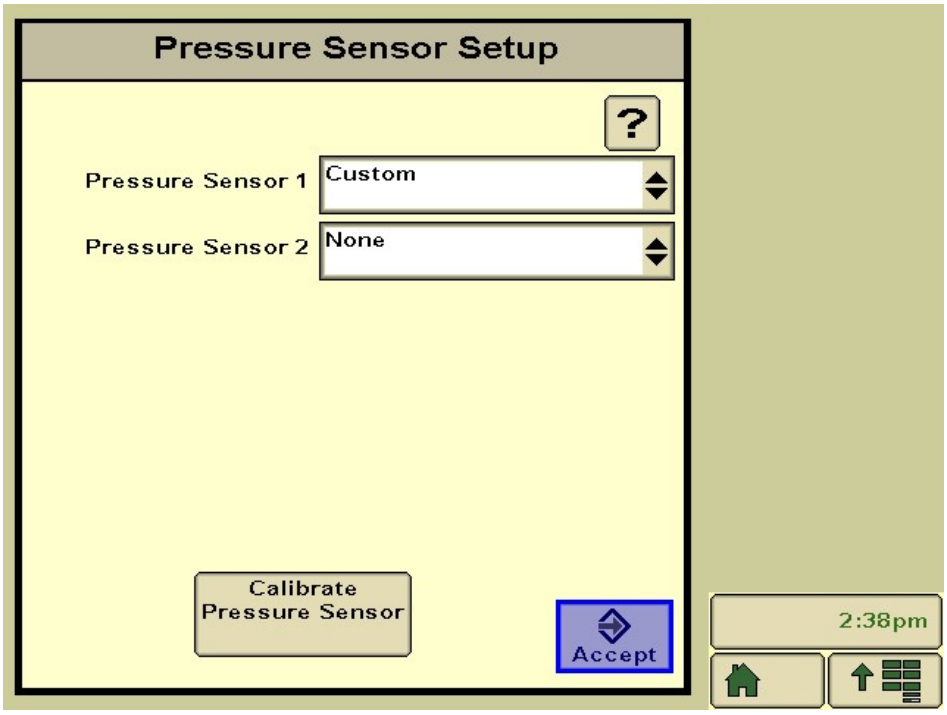
Ensure pump is **NOT** running and then select **Voltage-based Calibration**.



Enter Pressure Sensor Calibration factor 5mV/kPa : 500mV/bar : 34.5mV/psi
Press **Accept**.

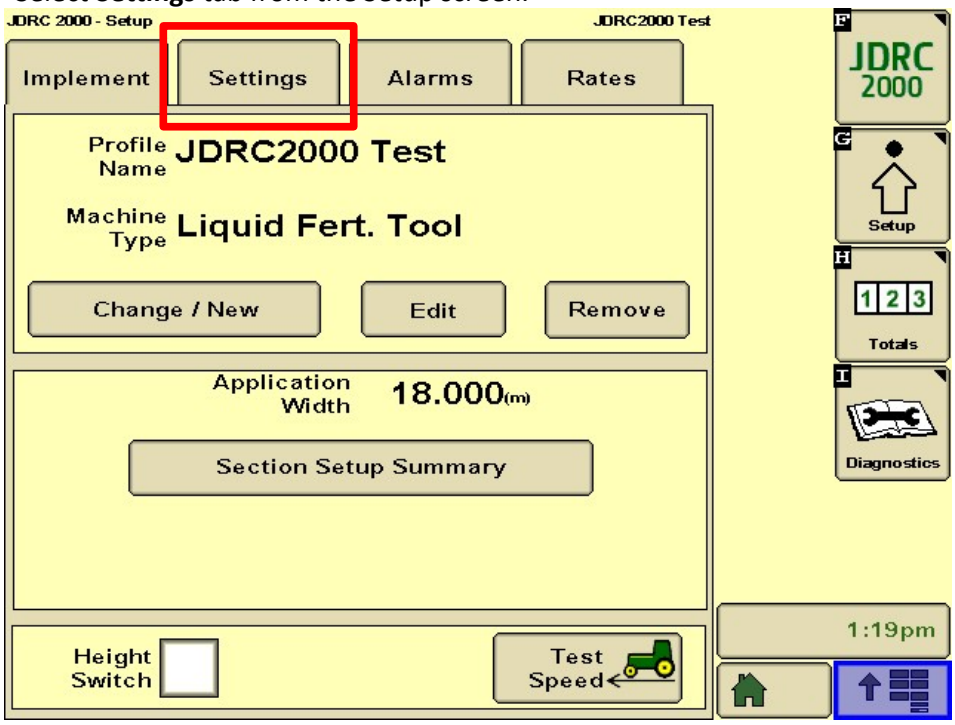


Press **Accept** to save settings and return to the Set up screen.

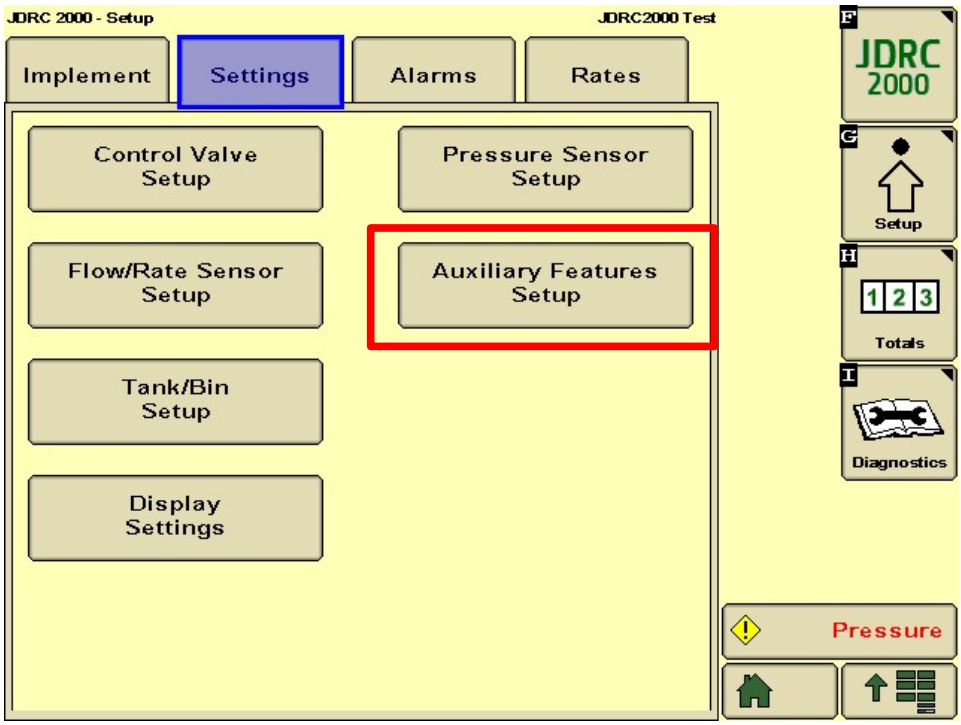


RPM Sensor Integration

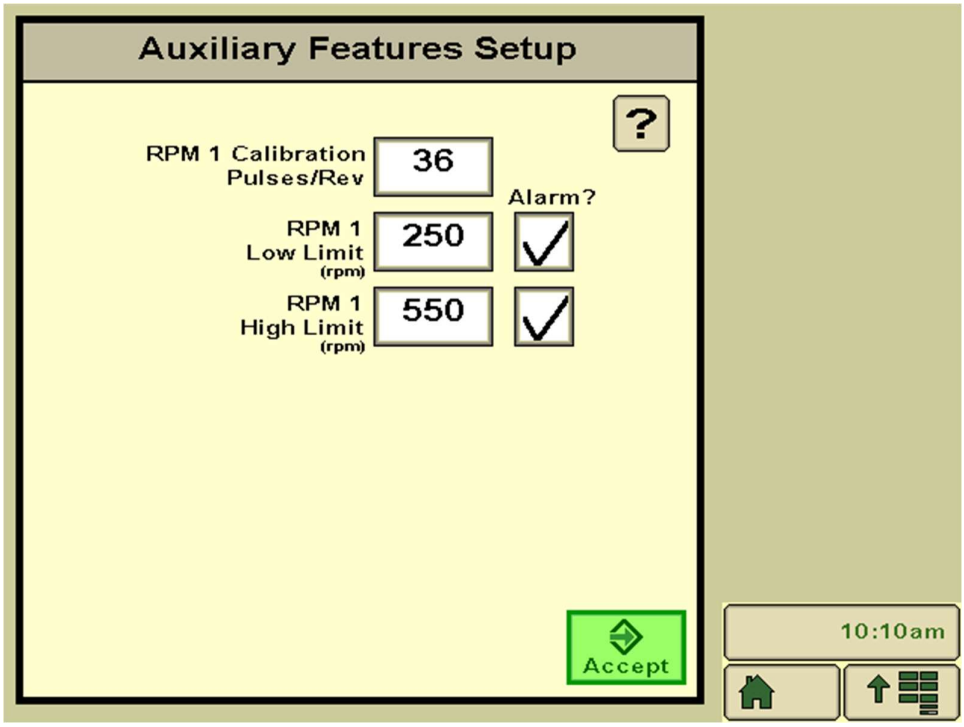
1. Select **Settings** tab from the Setup screen.



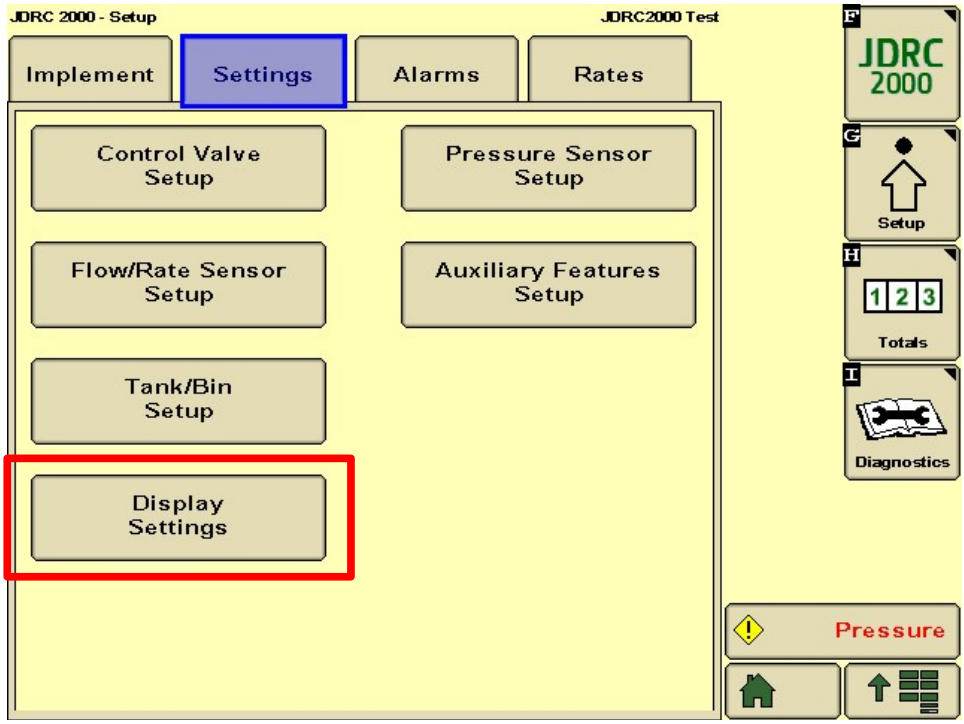
2. Select **Auxiliary Features Setup**.



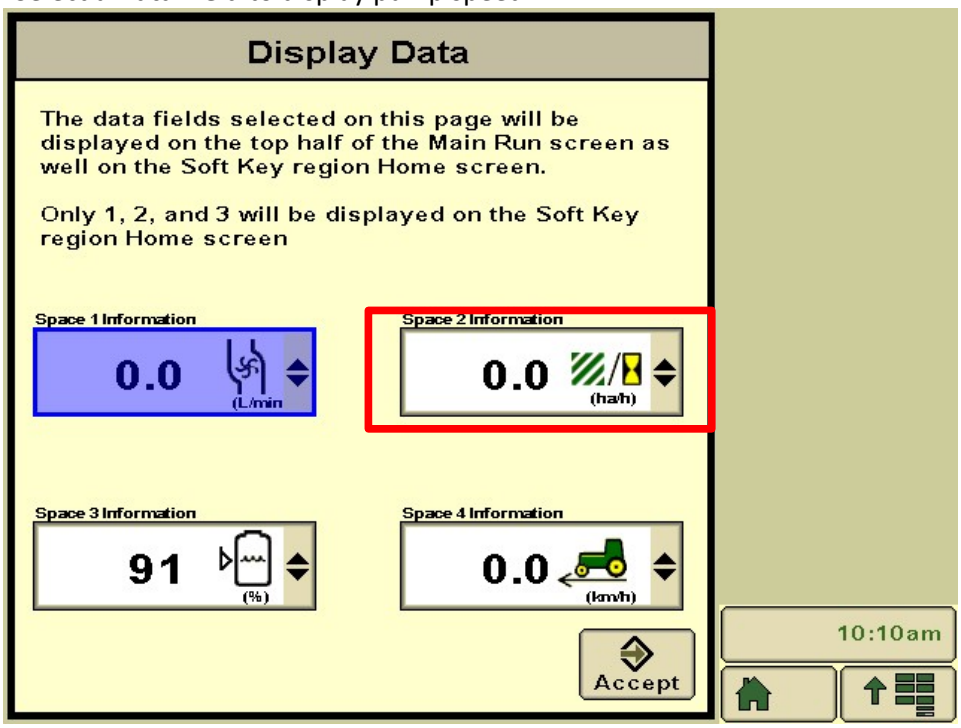
3. Enter **36** for RPM Calibration Pulses/Rev and **250** & **550** for Low & High RPM Alarm limits respectively. Press **Accept** to save settings and to return to Setup screen.



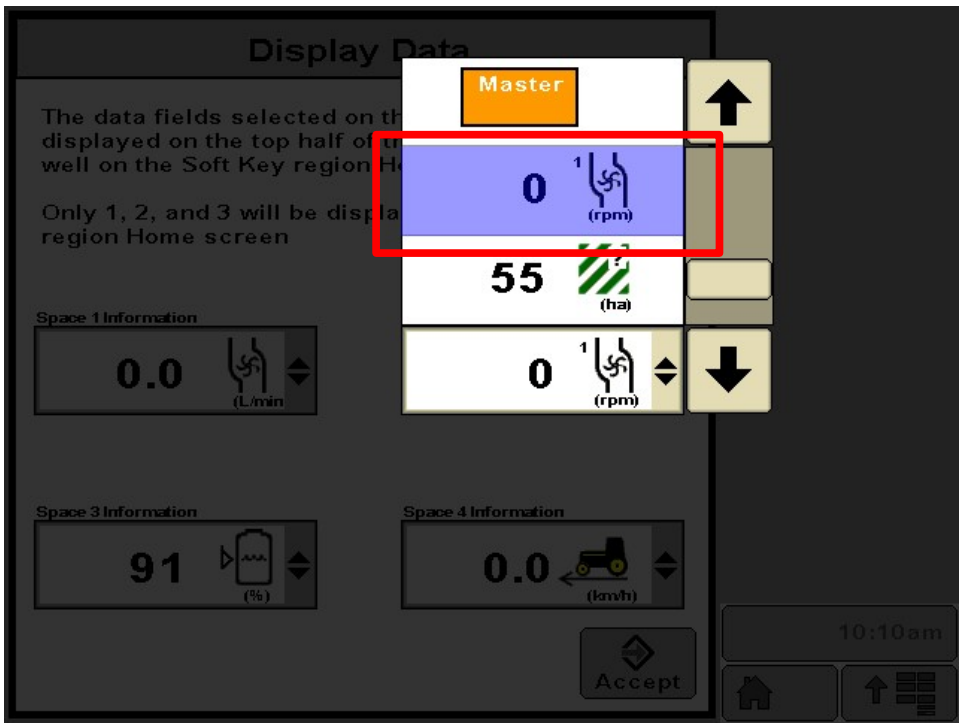
4. To configure the screen to display Pump speed, select **Display Settings**.



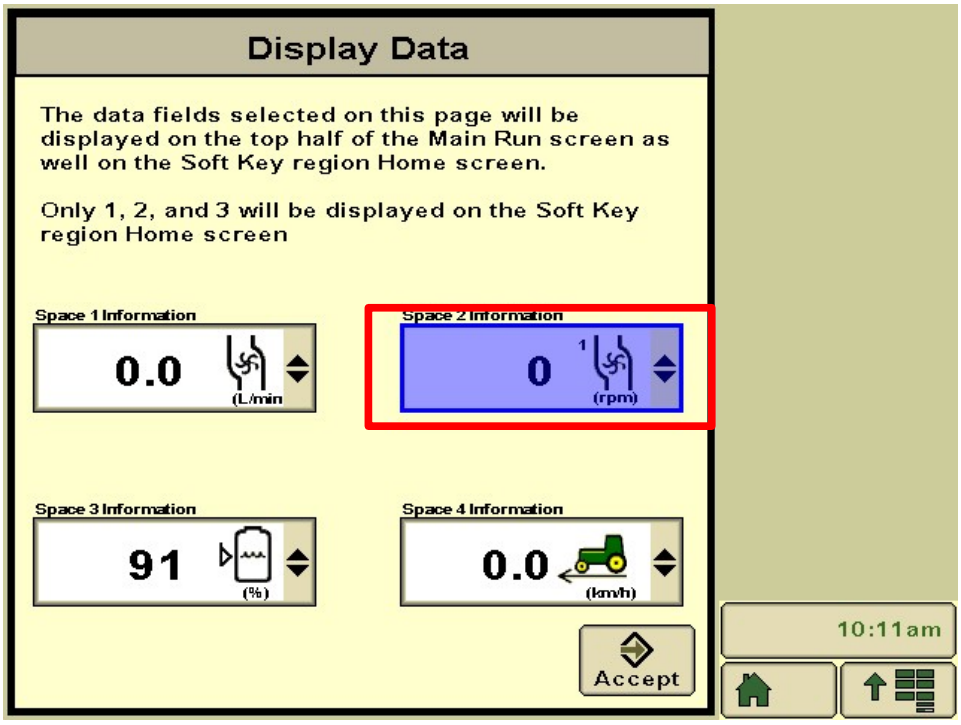
5. Select a **Data Field** to display pump speed.



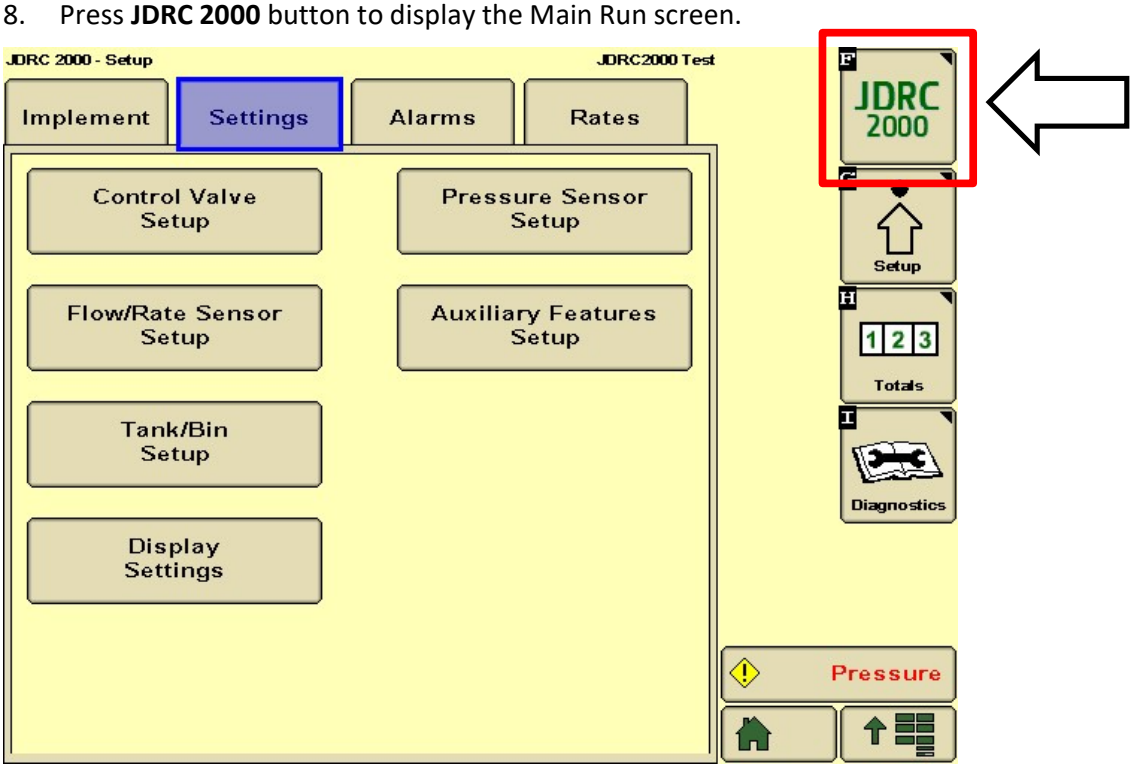
6. Scroll down the menu and select **Pump Speed** (RPM) option.



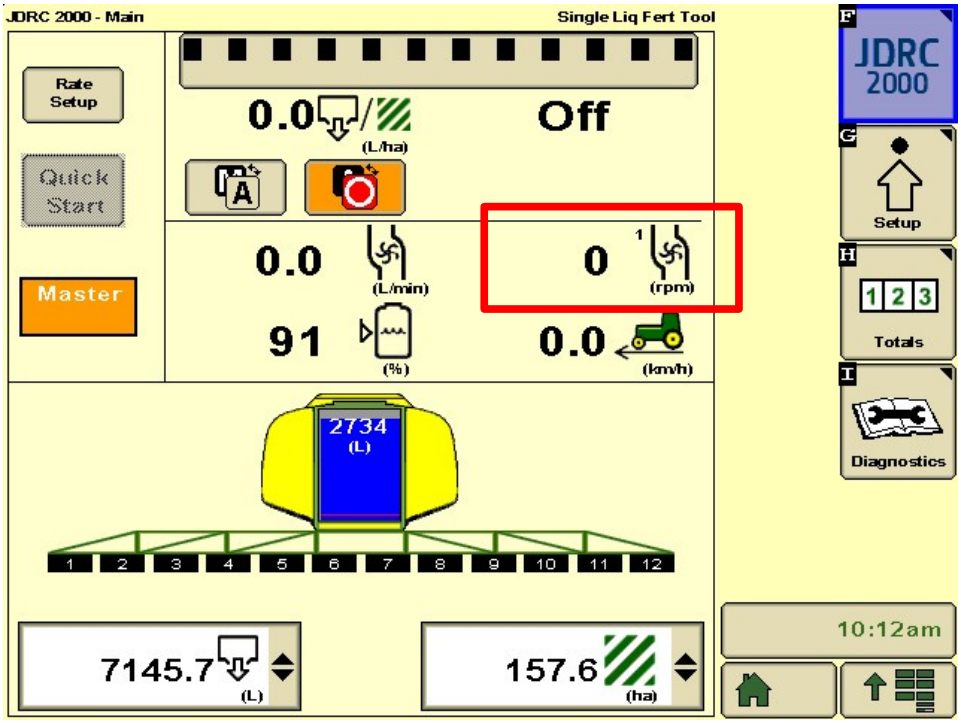
7. **Pump Speed** should now be displayed in the data field. Press **Accept** to save settings and return to Set up screen.



8. Press **JDRC 2000** button to display the Main Run screen.



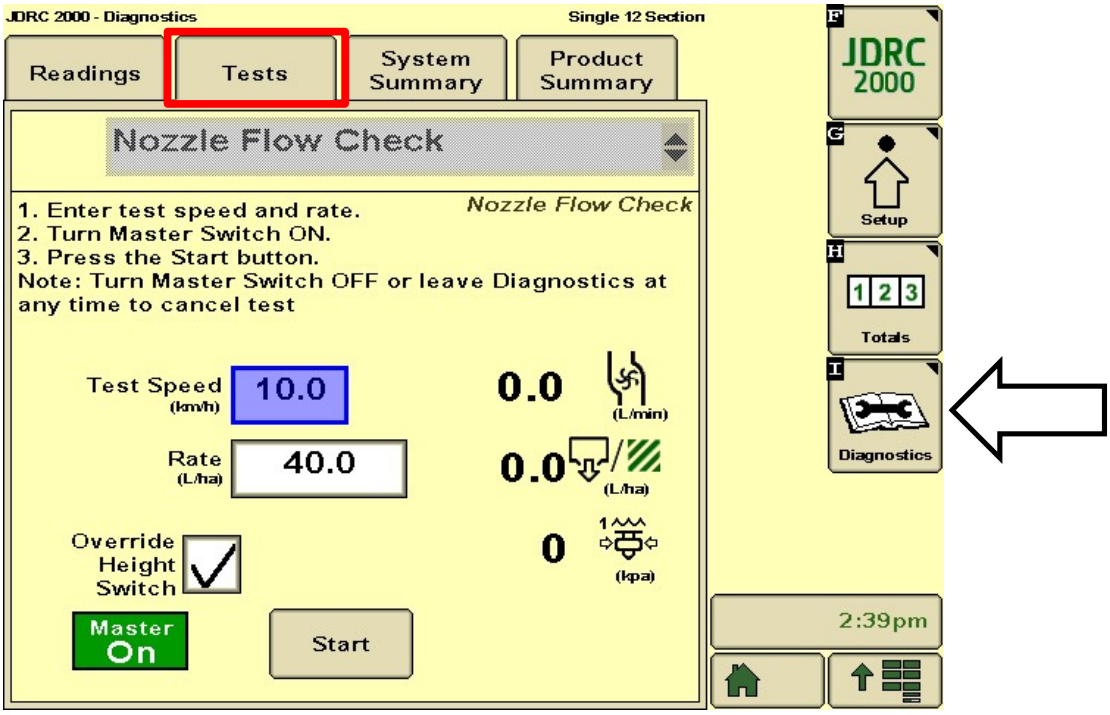
9. **Pump Speed** should now be displayed in the Main Run screen.



System Set Up Verification Tests

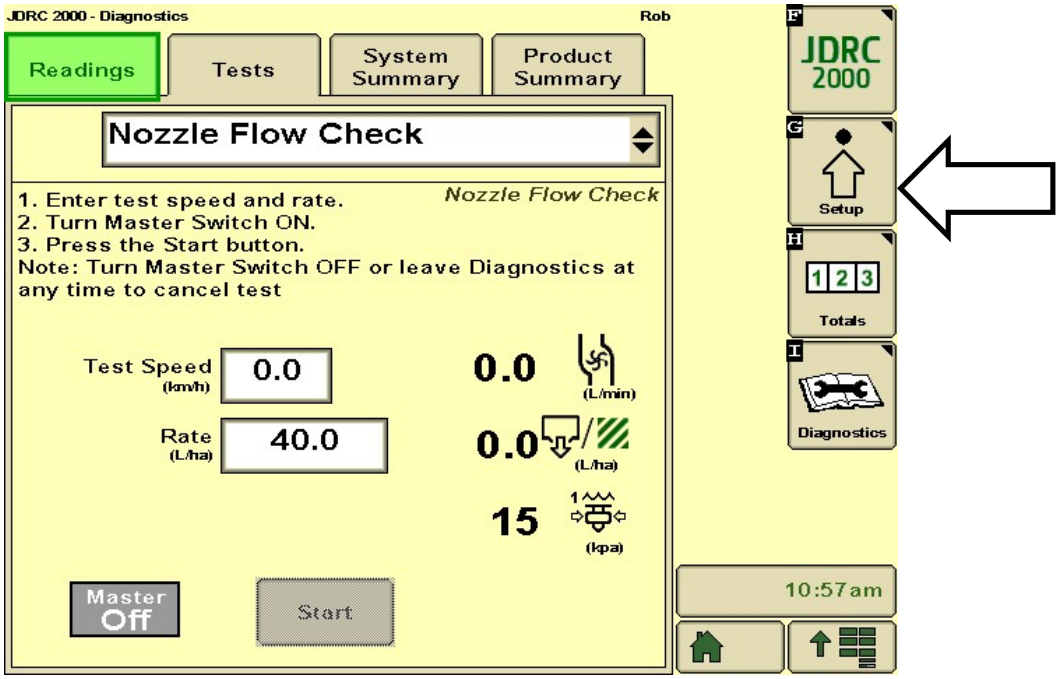
Enter **Diagnostics** screen and select **Tests** tab.

Start the pump and select **Nozzle Flow Check** from the drop-down menu to test control. Use typical speed and application rate to start the test then vary the speed and application rates to ensure the control system is performing correctly across the entire set up range. Turn the master switch (foot switch) off to terminate the test.

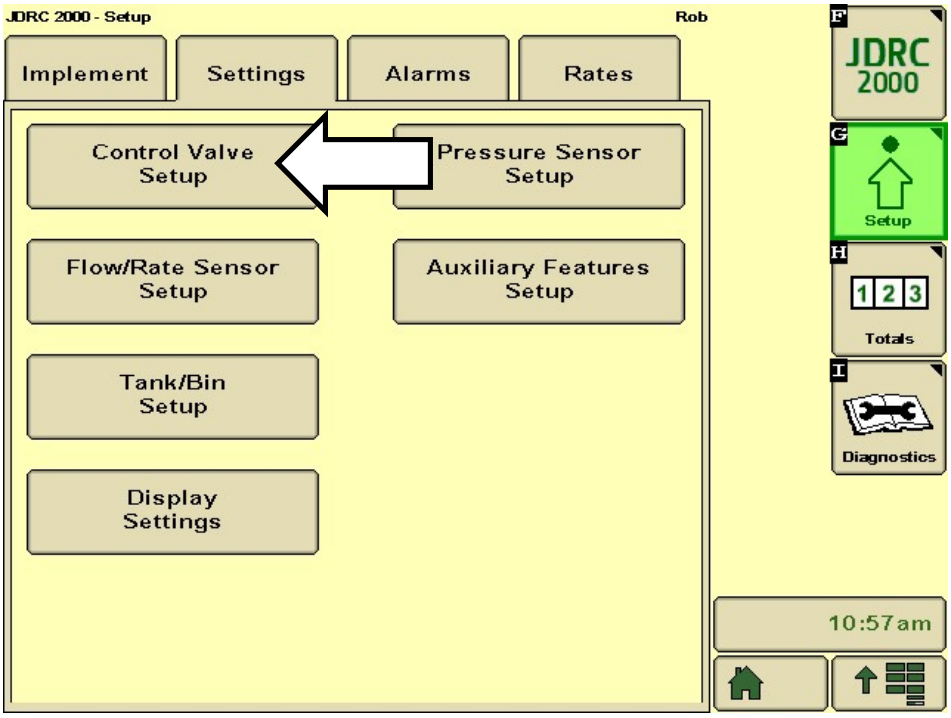


If rate control is erratic or slow, go to **Control Valve Setup** screen and reduce **Valve Response Rate**

Select **Setup**



Select Control Valve Setup



If rate response is slow- increase **Valve Response Rate**
If rate control is erratic- reduce **Valve Response Rate**