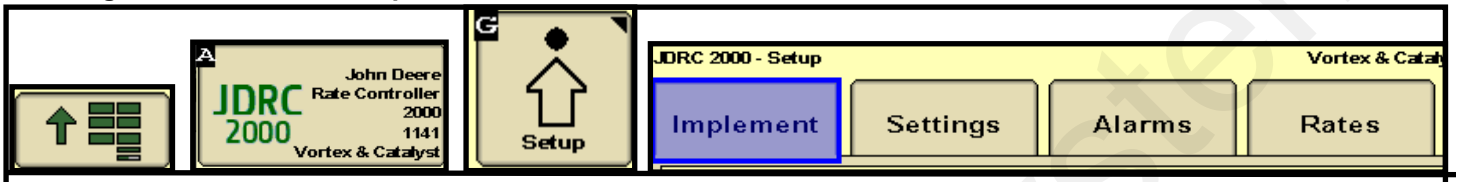
396-3566Y1

QuickStart setup instructions for JDRC 2000 and SurePoint harness for NH3 Profile plus one Liquid/Dry

213-00-3493Y_ 213-00-3495Y_ 213-00-3475Y_ 213-00-3537Y_

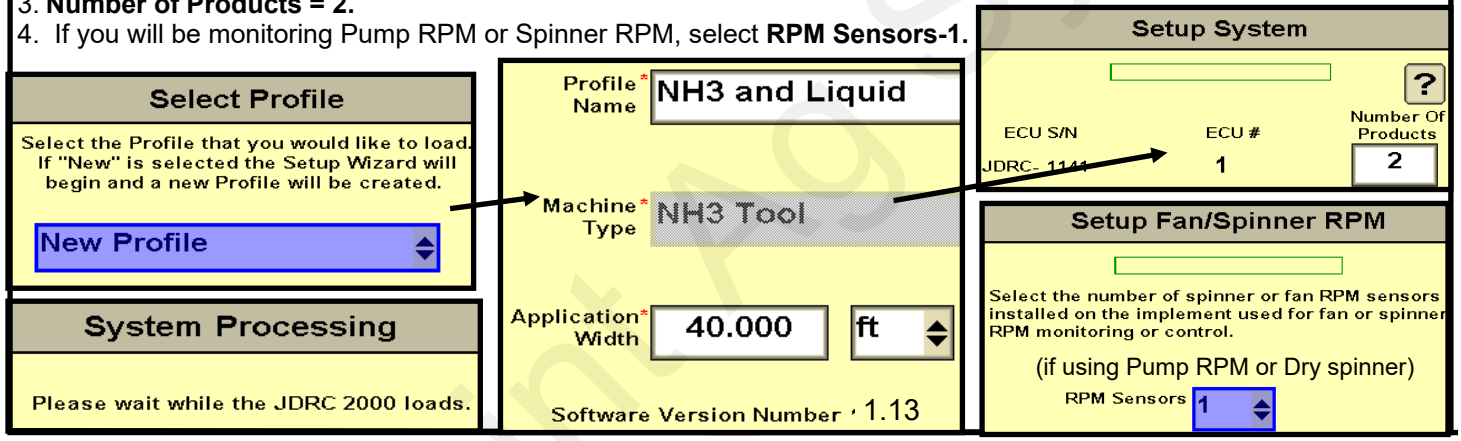
Below are typical SurePoint Liquid Fertilizer System setup screens. ***Your setup may vary.***
See the John Deere JDRC 2000 Operator's Manual for safety information and additional setup/operating information.

1. Navigate to the Profile Setup

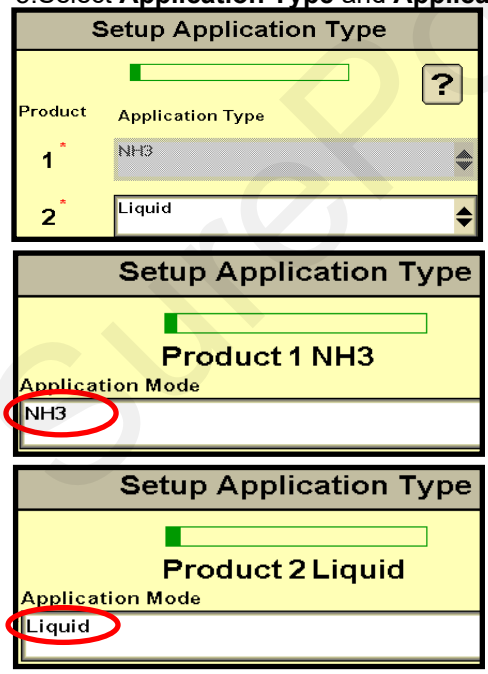


For initial setup, start a new profile. The JDRC 2000 allows you to store 8 profiles. Be prepared to wait during this phase of the setup.

2. Enter a **Profile Name**. **Machine Type—NH3 Tool. Software Version Number** should be 1.13 or higher.
3. **Number of Products = 2.**
4. If you will be monitoring Pump RPM or Spinner RPM, select **RPM Sensors-1.**



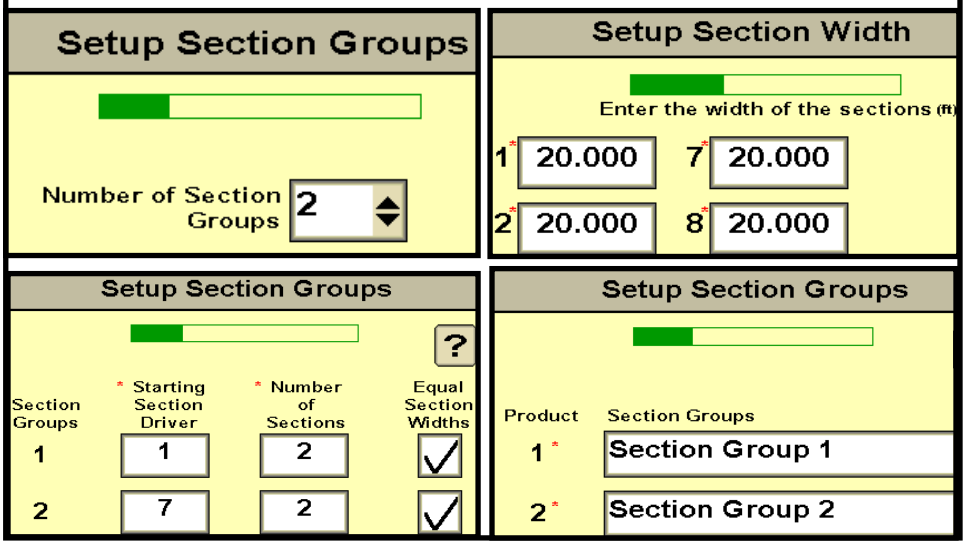
5.Select **Application Type** and **Application**



6. Set up **Section Groups. Section Group 2 will start with Section Driver 7.**

Other Section Setups are possible.
PR 1 (NH3)– Sections 1-6 are reserved for NH3
PR2—Starts with Section Driver 7

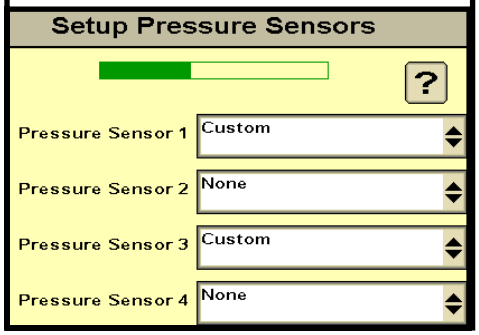
Sample Setup:

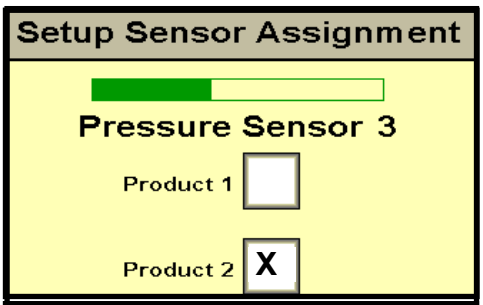


QuickStart setup instructions for JDRC 2000 and SurePoint:

Use with SurePoint adapter harness: 213-00-3493Y_ or 3495Y_ or 3475Y_ or 3537Y_ for NH3 Profile plus one Liquid/Dry product

7. The SurePoint pressure sensor will be set up as a **Custom** sensor.
Pressure Sensor 1—NH3
Pressure Sensor **3**—Liquid



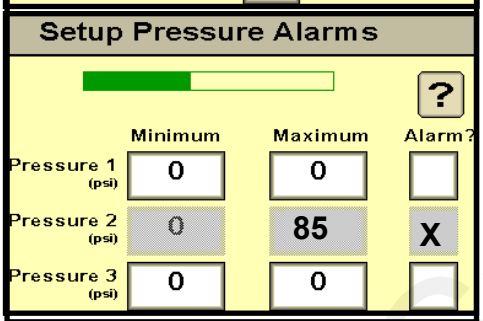


Assign Pressure Sensor 1 to Product 1.

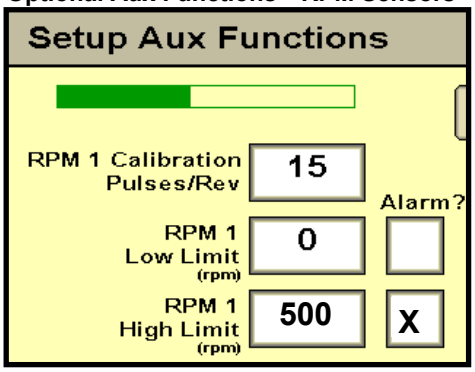
Assign Pressure Sensor 3 to Product 2.

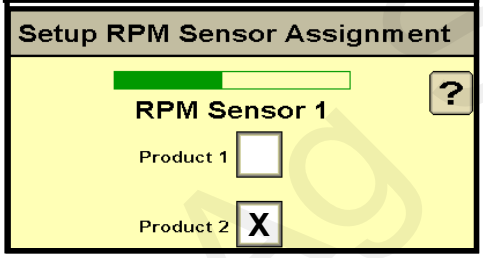
On the SurePoint wiring harnesses indicated above, Pressure Signal 1 is on the NH3 Product 1 connector.

Pressure Signal 3 and RPM Sensor 1 are on the Product 2 connector for Liquid.



8. **Optional Aux Functions—RPM Sensors**





*The SurePoint **hydraulic** pump with an **RPM Sensor is 15 pulses/rev** as shown. If monitoring something else, enter the pulses/rev for that encoder or sensor.)*

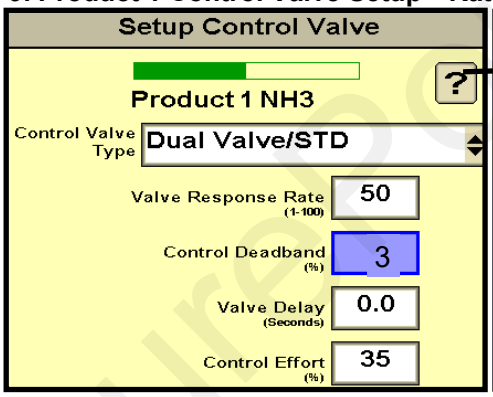
WARNING

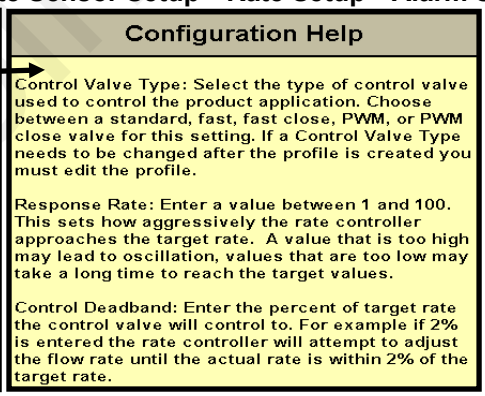
Anyone setting up, operating , or servicing an NH3 system must have an approved NH3 safety course before beginning work.

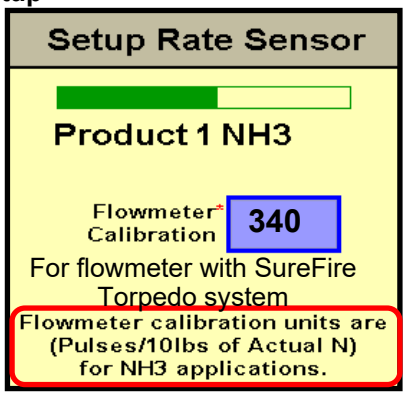
Follow ALL safety precautions EVERY time.

Be sure entire system is bled before opening any connections for service.

9. Product 1 Control Valve Setup—Rate Sensor Setup—Rate Setup—Alarm Setup

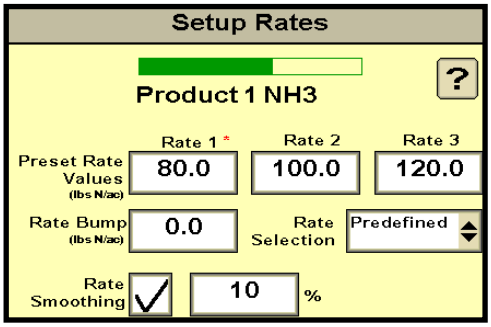


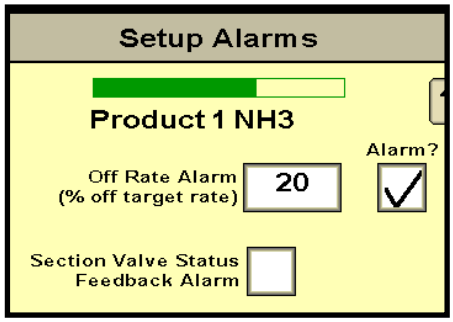




Start with the Default values for Valve Response Rate and Control Effort. Adjust as needed so system adjusts quickly to speed/rate changes, yet doesn't oscillate regularly going across the field.

If Control Deadband is set too low, it may create oscillation in the system.





10. Product 2 Control Valve Setup—PWM Setup

Control Valve Setup *(Also will do Advanced Tuning later.)*

Valve Response Rate: *(Adjust as needed)*

PumpRight (hydraulic)	80
Tower (electric)	100
Catalyst and Spartan	5-15

If pump is slow responding to rate or speed changes, increase **Valve Response Rate** 10 at a time. If product oscillates around rate going across the field, reduce **Valve Response Rate.**

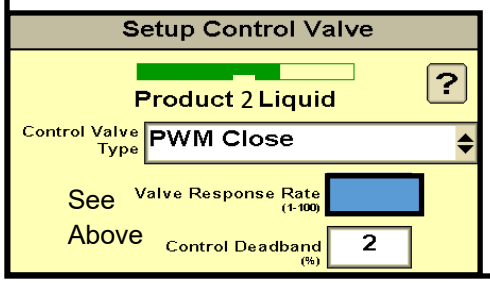
Control Deadband: Start at 2

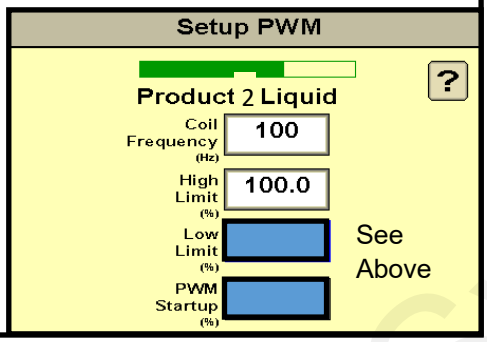
Low Limit (*Adjust in field as needed)*

PumpRight (hydraulic)	25-30
Tower (electric)	10
Catalyst and Spartan	5

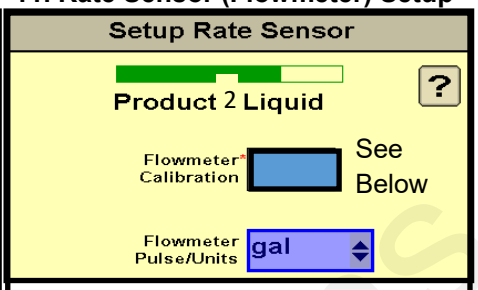
PWM Startup *(Adjust in field as needed)*

PumpRight (hydraulic)	40
Tower (electric)	25
Catalyst and Spartan	5-10





11. Rate Sensor (Flowmeter) Setup

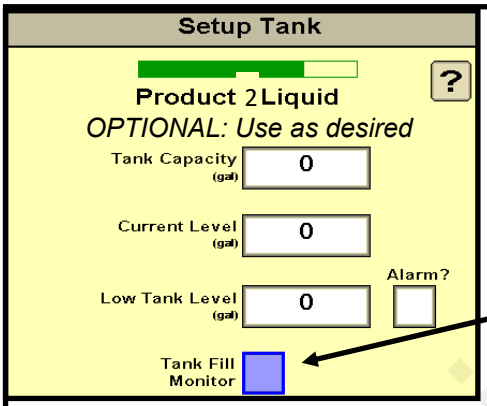


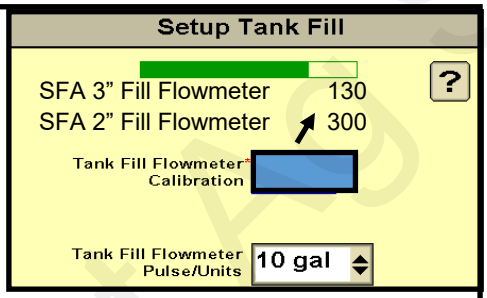
Flowmeter Size (GPM)	Pulses/ Gal	*Spartan model #*	*Puls/ fl oz*
0.08-1.6	***22710***		
0.13-2.6	3000		
0.3-5.0	3000	*115*	*1700*
0.6-13	2000	*125*	*890*
1.3-26	2000	*135*	*450*
2.6-53	2000	*145*	*220*

**** for 22710 flow cal use 177 pls/fl oz***

See Flow Cal on side of flowmeter

12. Tank and Fill Flowmeter Setup (Optional)



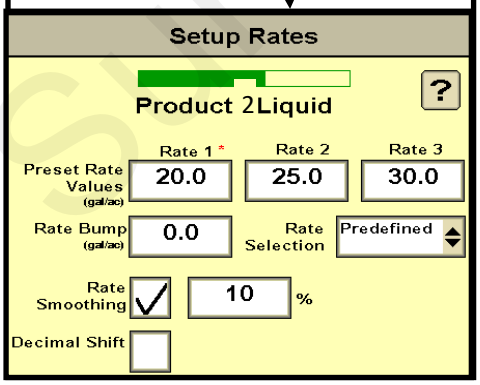


Check **Tank Fill Monitor** box if using a fill flowmeter. Then enter **Tank Fill Flowmeter Calibration (Units are 10 gal).**

13. Rates and Rate Smoothing Setup

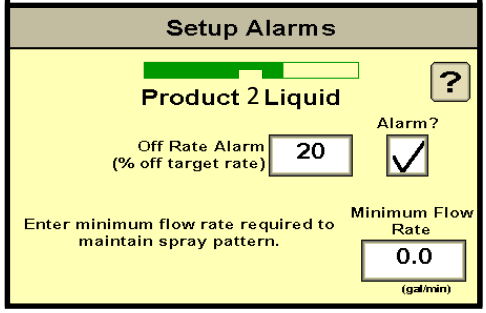
Set **Rates** and **Rate Smoothing** as desired.

Decimal Shift: Normally, set at 1. Set at 2 if you need 2 decimal places, as in 0.25 gpa.



14. Off Rate Alarm Setup

Set **Off Rate Alarm** as desired. The **Minimum Flow Rate** box will not be present if a pressure sensor has been assigned to this product. Typically, Minimum Flow Rate will be left at 0.



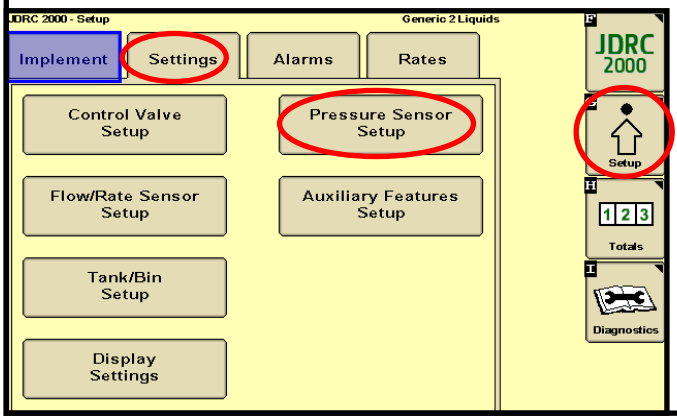
This QuickStart sheet does not cover every possible setup. Your setup may be different.

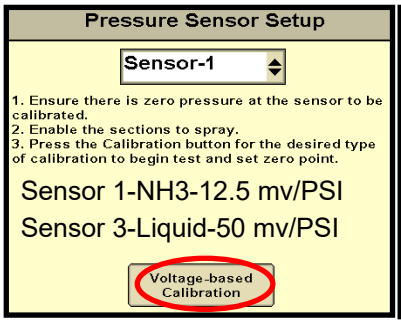
See the John Deere Rate Controller 2000 Operator's Manual for important safety information and complete set-up and operating instructions.

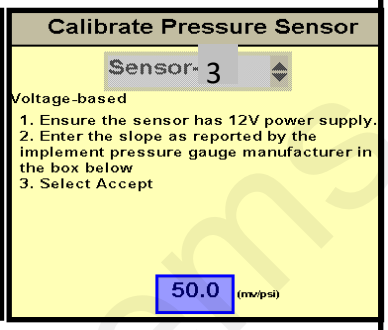
SurePoint harnesses for the JDRC 2000 are designed for specific operating setups. Pinouts on the JDRC 2000 change depending on the Profile Setup and the number of products. See the wiring harness diagram for your harness.

More information is available at www.surepointag.com.

15. All **Pressure Sensors** must be calibrated. See the boxes below for the procedure. Enter **50.0 mv/PSI** for SurePoint 0-100 PSI sensor. *(Unplug the sensor during the calibration process.)*

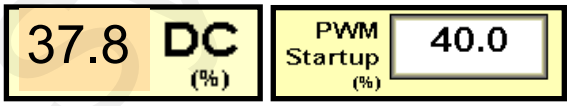




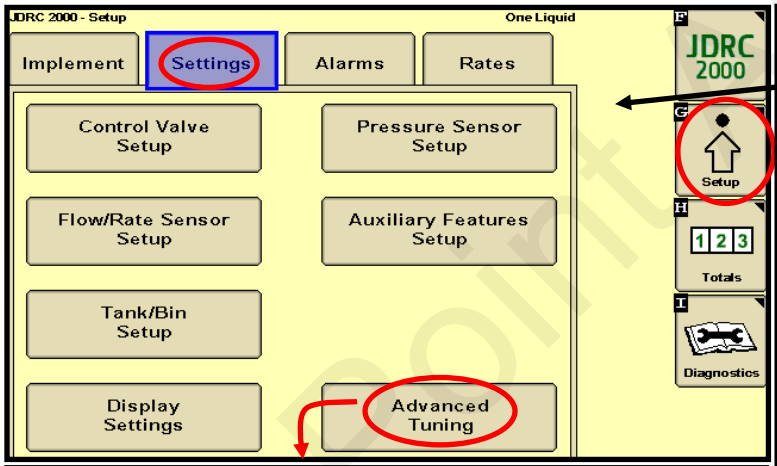


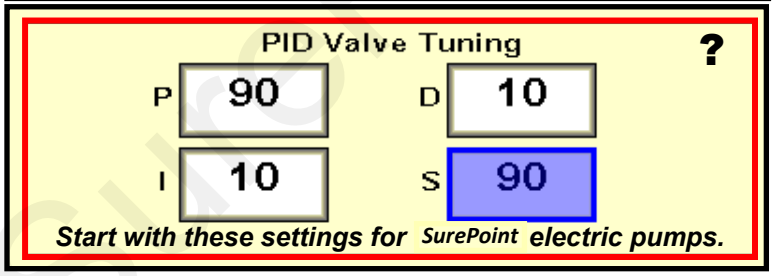
For complete information on how the sensor is operating, go to **Diagnostics > Readings > Pressure Sensors.**
0 Pressure Voltage should be 0.00 V.

Valuable Tip for Best Startup Performance on Liquid System
For best startup performance, set the **PWM Startup** at or slightly above the normal operating PWM Duty Cycle (DC%). When the pump starts, it will go immediately to that Duty Cycle and then will have just a minor adjustment to lock on to the Target Rate.
For example, if the normal DC% is as shown on the right, set the PWM Startup at 40% and the pump will start just a little faster than normal operating speed for a quick return to rate.



16. Advanced Setup Information (Advanced Tuning)





MUST do the following for Electric Pump Systems

16. Advanced Tuning

On SurePoint **electric pump systems**, it will be necessary to use the **Advanced Tuning** feature in addition to the regular Control Valve Calibration. To activate **Advanced Tuning**, press and hold the **Settings tab** for about 8 seconds.
On **electric pump** systems, set the PID Valve Tuning parameters as shown (below left). Press the "?" for an explanation of what each of these values does.
Fine-tuning of the system may require some adjustment of these numbers along with the Valve Response Rate on the Control Valve Setup.

For quickest system response set P =100 and S=100, and Valve Response Rate =100.
If system oscillates going across field and won't lock on to rate, start by lowering Valve Response Rate 10 at a time.

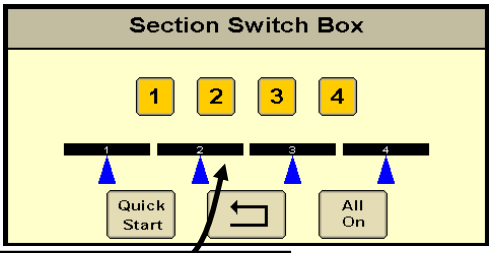
*You should **not** need to use Advanced Tuning on a standard SurePoint hydraulic pump system.*

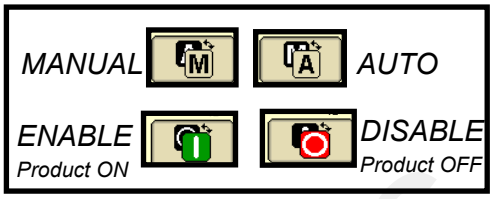
⚠ WARNING

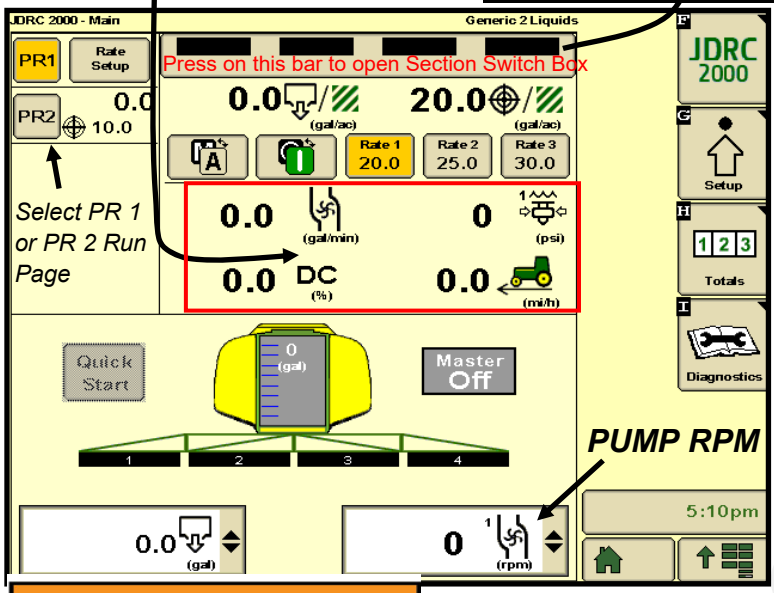
Anyone setting up, operating , or servicing an NH3 system must have an approved NH3 safety course before beginning work. Follow ALL safety precautions EVERY time. Be sure entire system is bled before opening any connections for service.

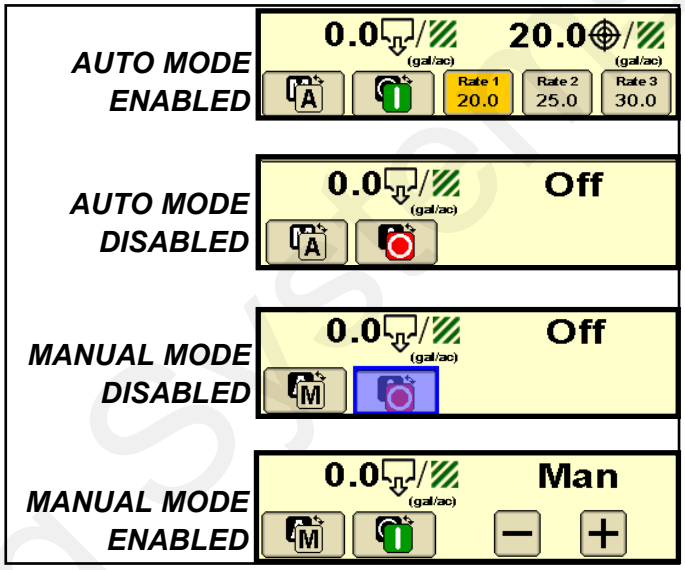
Advanced Setup and Operating Information, Run Page, Initial Startup

17. For the Liquid System, set these 4 items in **Setup > Settings > Display Settings**
- **Gal/min**
- **Pressure (PSI)**
- **DC(%) (PWM)**
- **Mi/hr**









WARNING ***Before opening the nurse tank valve, be sure it is safe to do so.***

18. NH3 Initial Operation: ***FOLLOW ALL SAFETY PRECAUTIONS BEFORE TURNING ON ANHYDROUS AMMONIA***

1. *Before opening nurse tank valve, check the operation of the control valve:* ***Diagnostics > Tests > Product 1 > Control Valve Test.*** *Be sure the control valve is moving in the correct direction.*
2. *Before opening nurse tank valve, run* ***Energize System Test*** *to check the operation of the valves.*
3. *When safe to do so, slowly open the nurse tank valve. Running Energize System test will allow anhydrous ammonia to escape. Be sure it is safe and wind is in the right direction before running this test. Read all safety precautions before starting this test.*
4. ***Bleed System Test*** *will open the valves to empty the system. Close the nurse tank valve before running this.*
5. *Monitor amount applied with first tank or two and check the amount shown on the display against the weigh ticket for the tank. Adjust flowmeter calibration as needed.*

19. Liquid Initial Operation in MANUAL mode:

1. Fill the system with water. For first time startup, open air bleed valve.
2. Go to Diagnostics > Tests > Calibrate PWM Limits
3. Height switch must be DOWN or override Height Switch.
4. Turn on Master Switch. Start Test. Press and hold (+) to increase flow.
5. Monitor Flow (gal/min), PSI, DC, Pump RPM.
6. Turn Master Switch OFF.

Also, you can run **Control/Section Test** to test the operation of the Liquid System.

20. Liquid Initial Operation in AUTO mode

1. Go to Diagnostics > Tests > Nozzle Flow Check
2. Enter Test Rate and Test Speed.
3. Turn on Master Switch. Start
4. Monitor Actual Rate (gal/ac), Flow (gal/min), PSI, DC, Pump RPM.
5. Turn Master Switch OFF. (NOTE: Pressure will be much less with water than with heavier, thicker fertilizer.)