396-3460Y1 Setup Screenshots for JDRC 2000 with NH3 and SureFire Catalyst System for Low Rate Liquid

Screenshots from JDRC 2000 for setting up NH3 and NutriSphere NH3 liquid on a SureFire Catalyst system using harnesses 201-3426Y1 and 207-3427Y1.

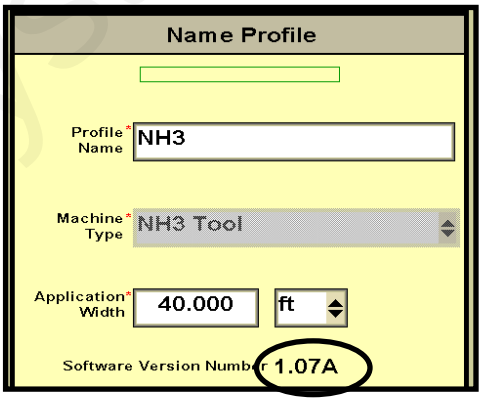
Not all screenshots and entries will be the same on your setup.

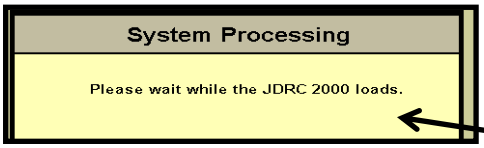
Be sure your John Deere dealer has upgraded the JDRC 2000 software to at least v.1.07A.

Valve calibration settings for the anhydrous system must be obtained from your system manufacturer.

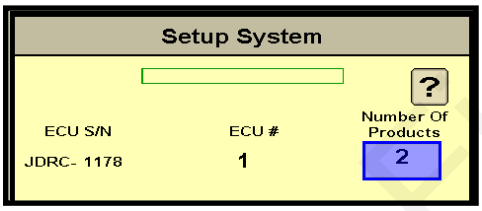
The system will be set up as an NH3 profile with 2 products. Product 1 is NH3, Product 2 is liquid.

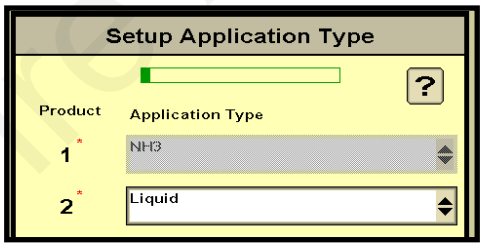
For full instructions on the setup and operation of the JDRC 2000 see the John Deere Rate Controller 2000 Operator's Manual.

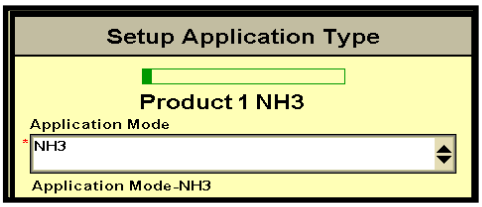


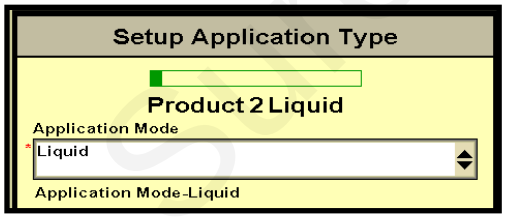


There will be some wait-time while the JDRC 2000 loads.









Any personnel operating or servicing an anhydrous ammonia application system must be thoroughly trained in the safe handling of anhydrous ammonia and in emergency procedures in case of an accidental release of anhydrous ammonia.

This manual does not provide the training necessary for the safe operation of an anhydrous ammonia application system.

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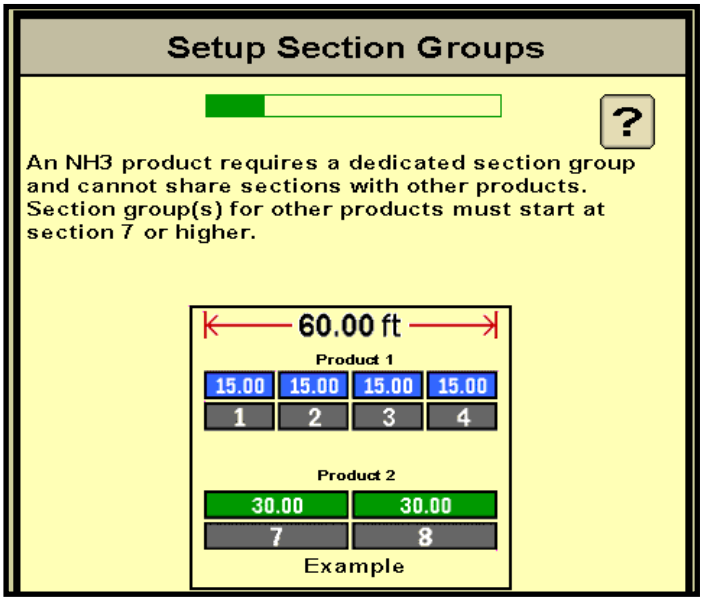
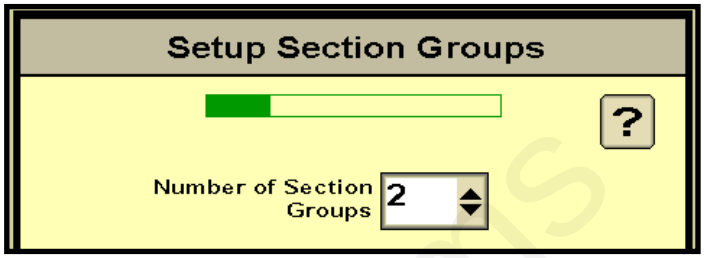
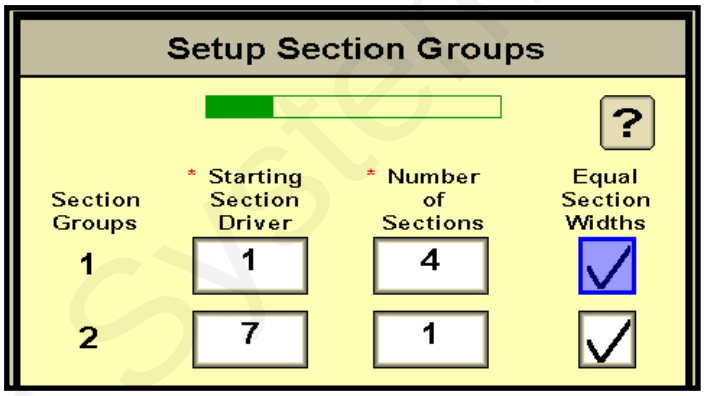
Sample Section Groups and Section Driver Setup. Your setup may be different.

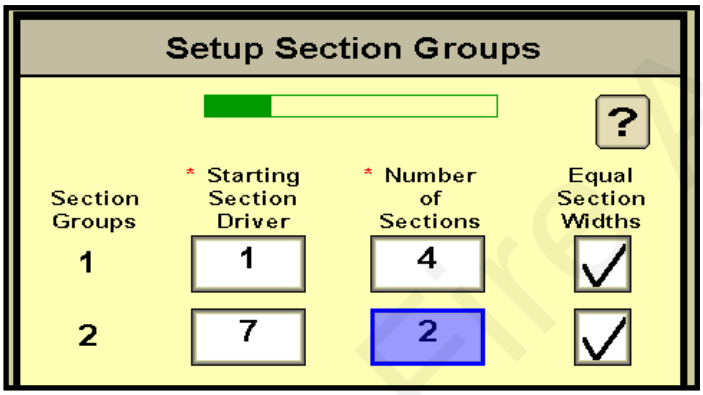
On an NH3 setup on the JDRC 2000, Section Group 1 and Section Drivers 1-6 are reserved for NH3.

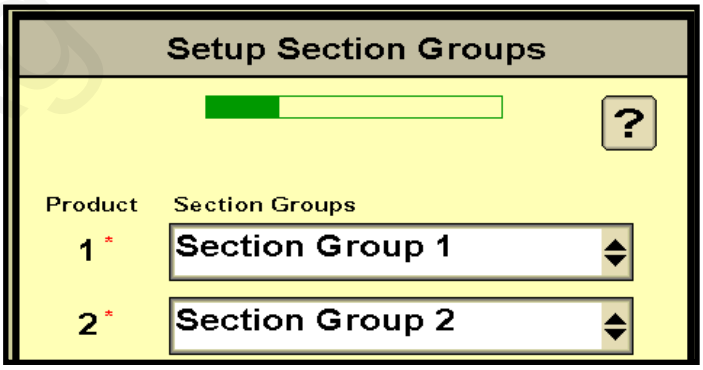
The NutriSphere NH3 liquid will be Section Group 2, and will start with Section Driver 7.

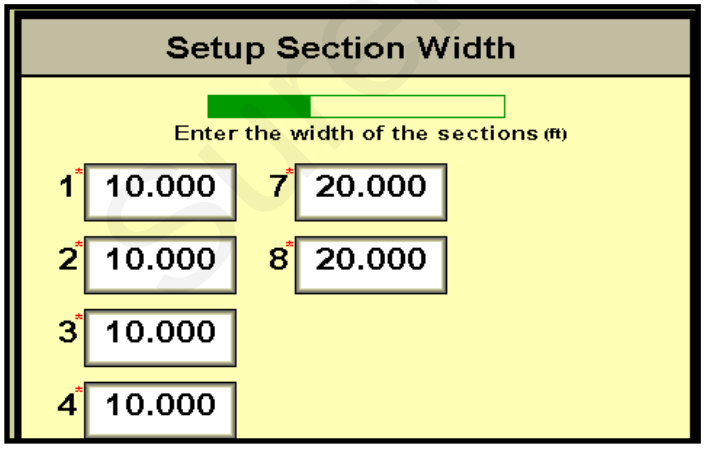


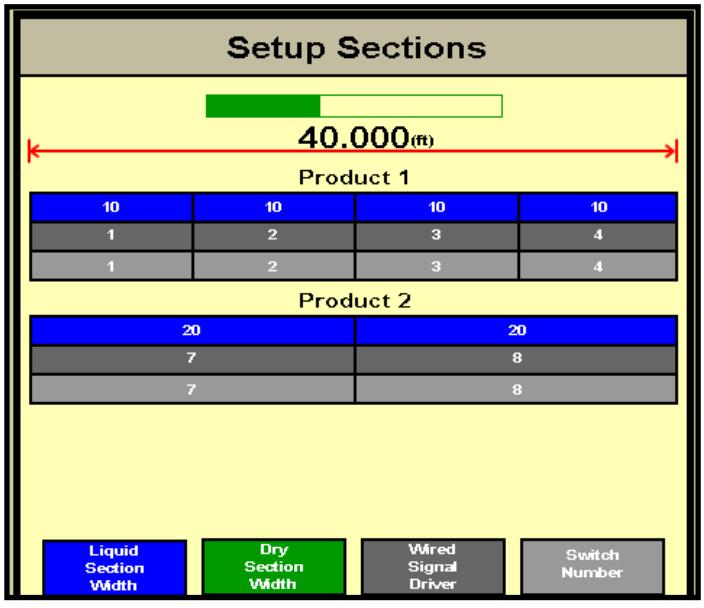






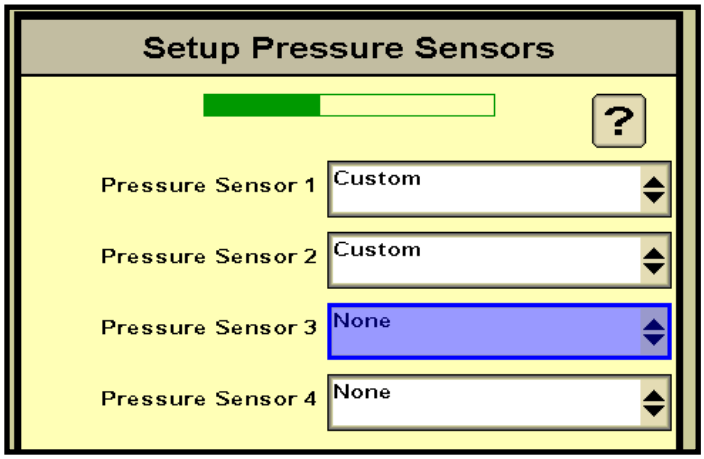


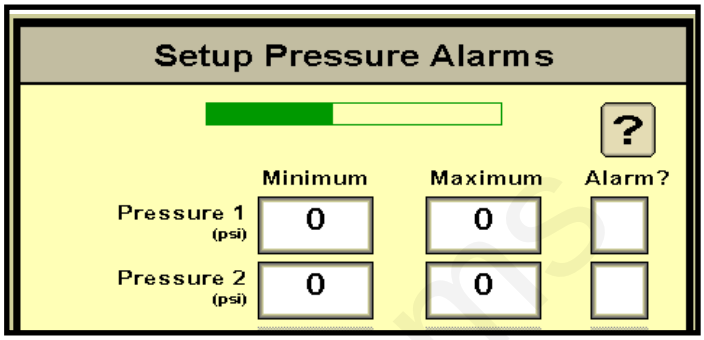




Sample Pressure Sensor Setup.

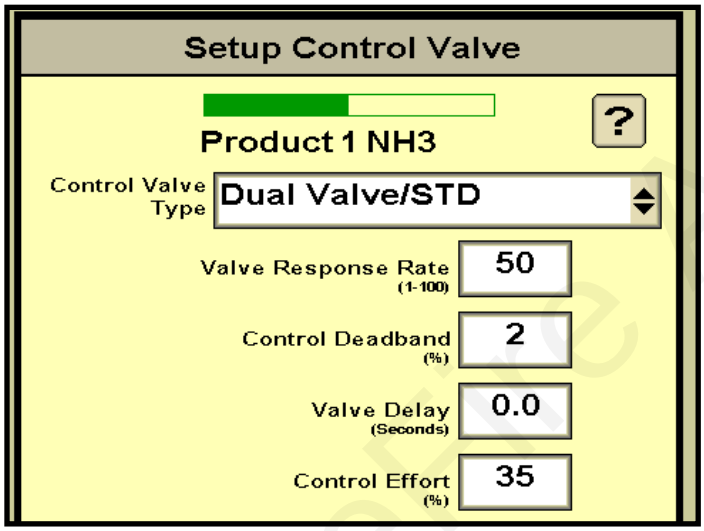
A SureFire pressure sensor will be set up as a Custom Sensor. You can set up 1 or 2 pressure sensors using these harnesses.

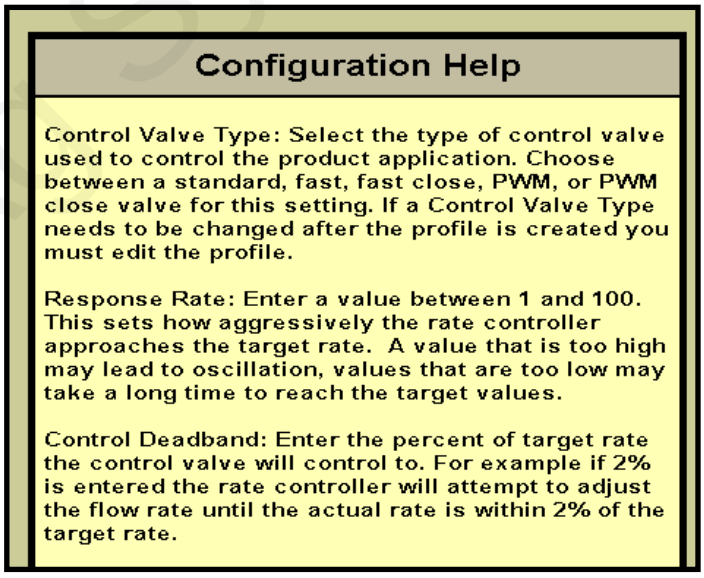


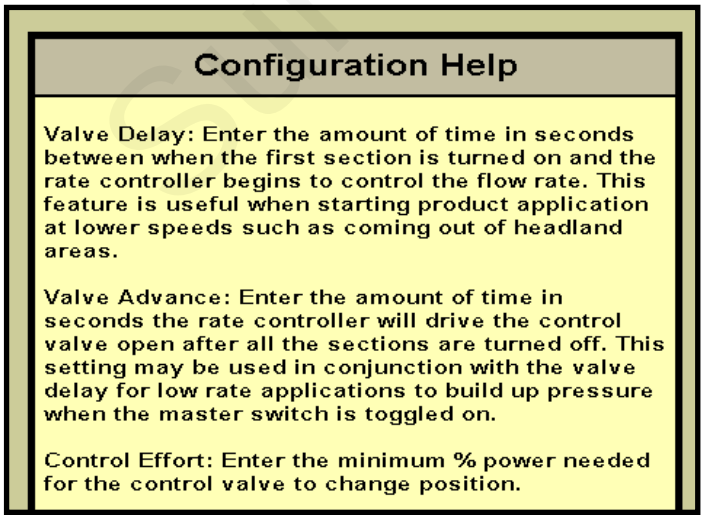


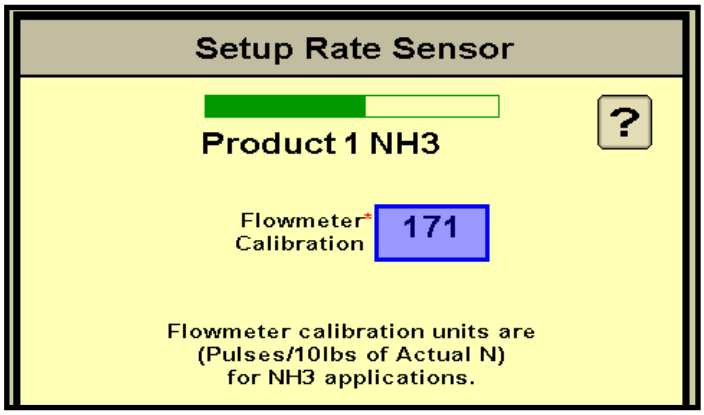
Set up as desired. If you put a check mark in the Alarm box, the system will not operate below that Minimum Pressure or above that Maximum Pressure. This may keep you above or below your Target Rate.

Set up the NH3 Control Valve based on your NH3 system manufacturers recommendations. Your settings may be different than those shown.



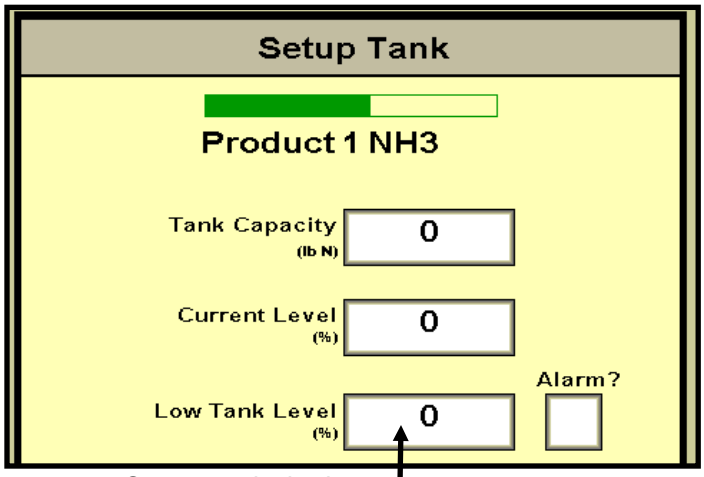




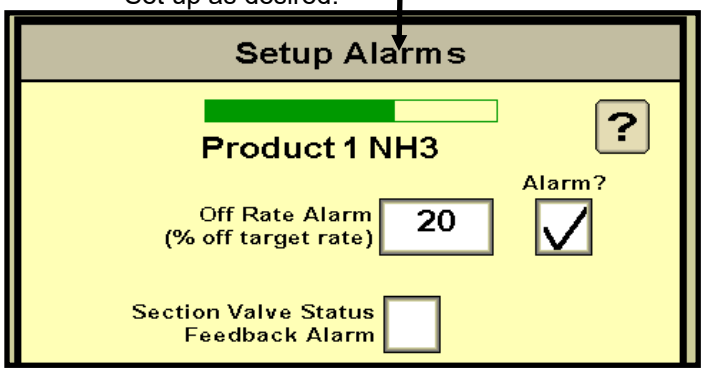


Flowmeter Calibration units are Pulses per 10 lbs of N. Your number may be different than above.

pulses / 10 lbs = ((?) pulses / 10 gallons) / 4.22

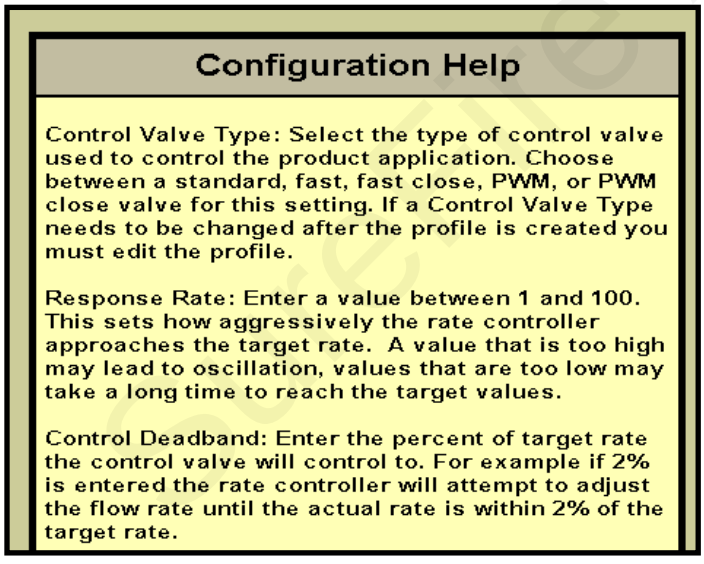


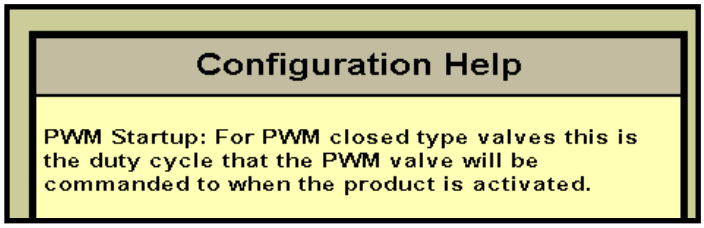
Set up as desired.

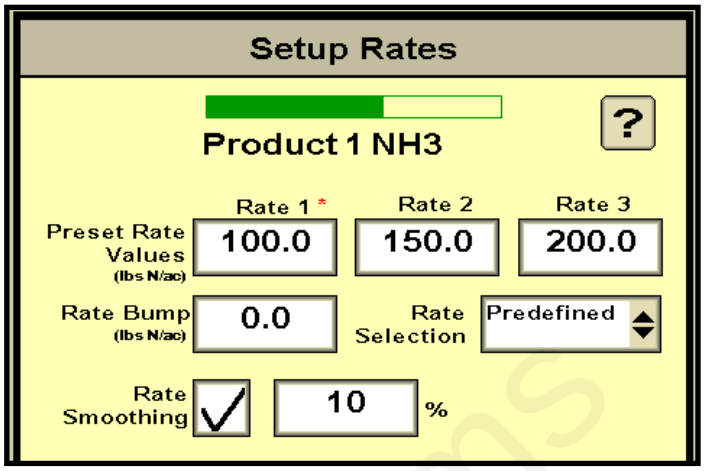


Start with the Valve Response Rate at 50. If system is too slow to adjust to speed changes, increase by 5 at a time.

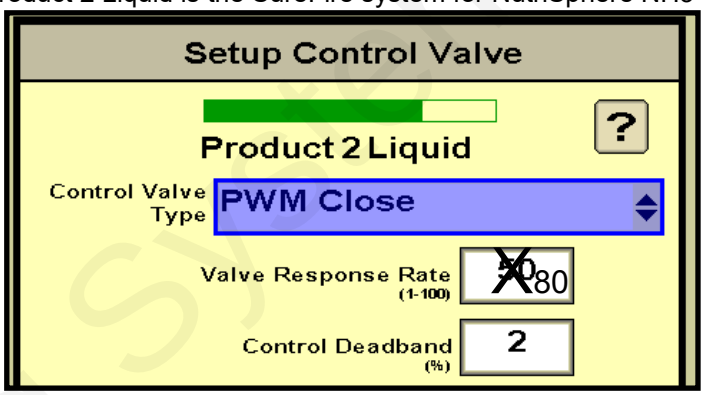
If the system overshoots and oscillates decrease by 5 at a time.

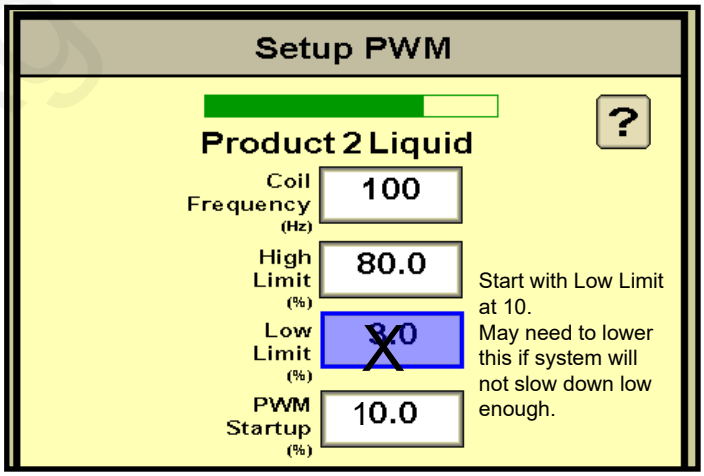


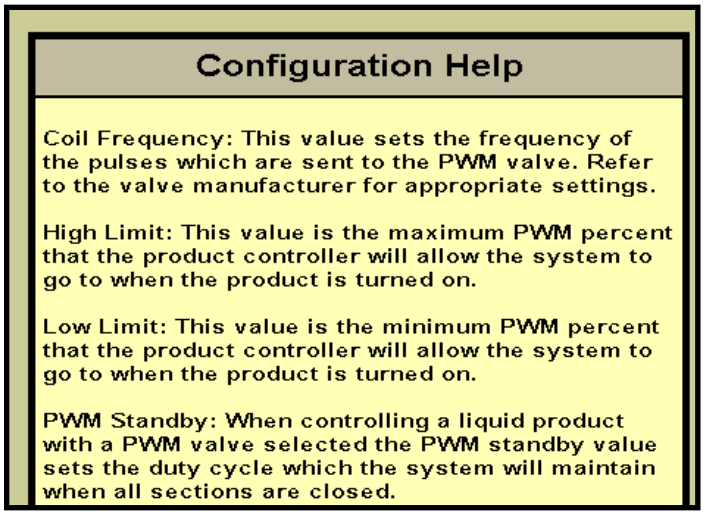




Product 2 Liquid is the SureFire system for NutriSphere NH3

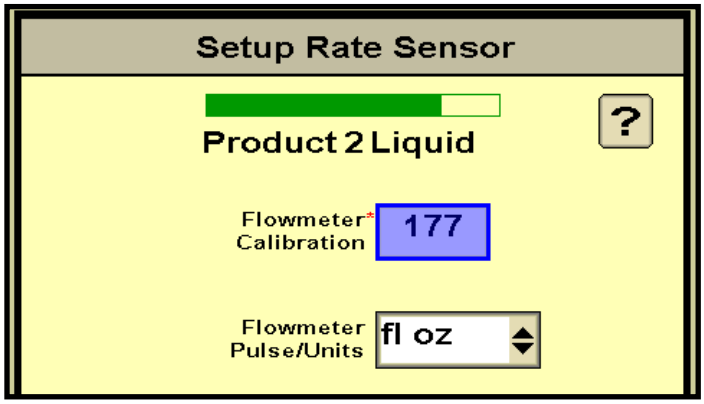


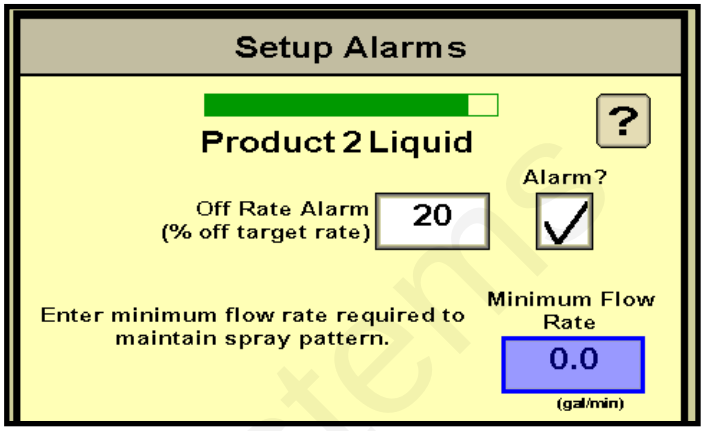




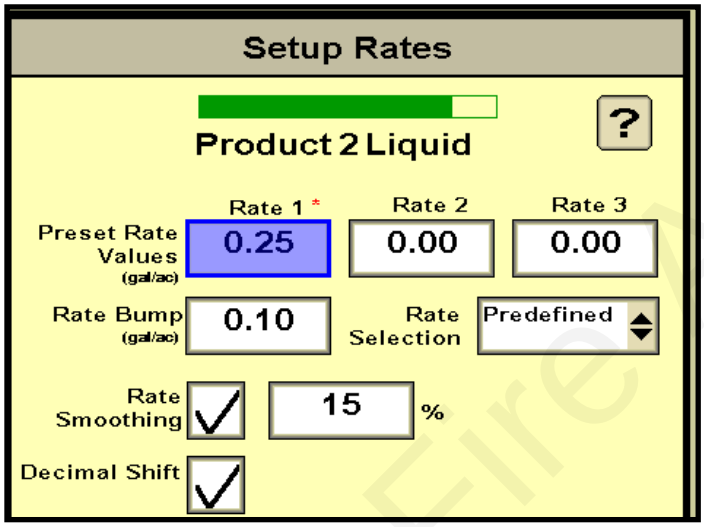
Most SureFire Catalyst systems with the 0.08 to 1.6 GPM flowmeter have a flow cal of 22710 pulses per gallon. The JDRC 2000 will not allow a 5-digit flow cal, so we use pulses per fl. oz. (22710 / 128 = 177 pulses per fl.oz.)

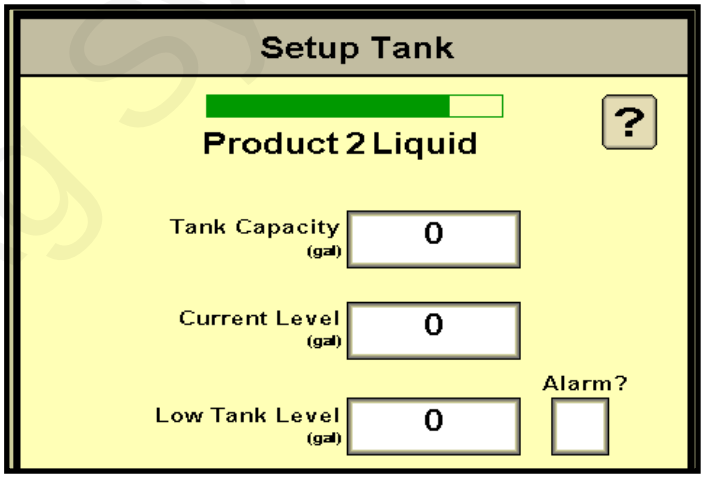
Check the Serial Number sticker on the side of the flowmeter to confirm pulses/gal. Verify the flowmeter calibration number for your flowmeter.





For a rate of 32 oz/acre (32 / 128 = 0.25 gal/acre), check the Decimal Shift box, and enter the rate as 0.25 gal/acre.



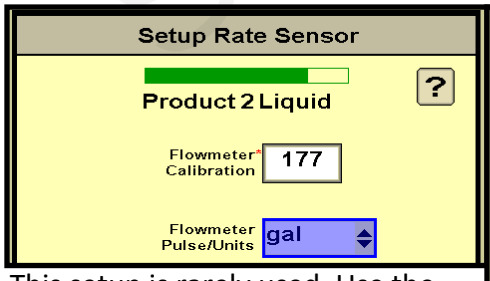


Set up as desired.

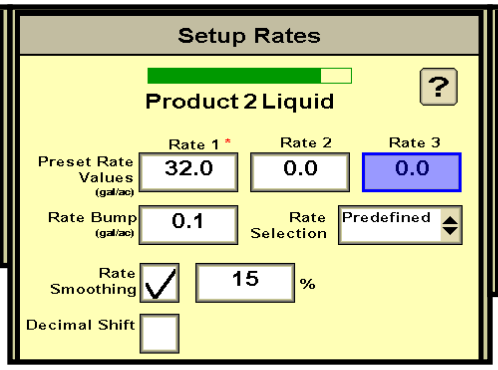
Alternate Setup: (See pictures below) To show the rate in ounces per acre. This will show a rate of 32 oz/acre as 32. This will not be used very often. Use the setup shown above for most cases.

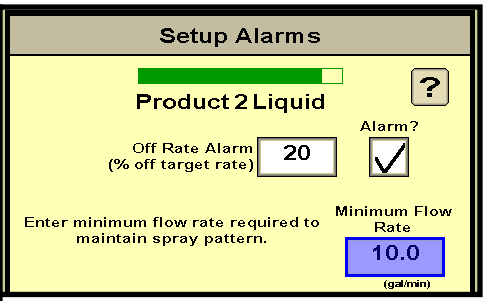
The controller thinks it is 32 gal/acre, but it is actually measuring ounces.

Set the flow cal at 177 and the units as pulses per gallon. Set the rate at 32.



This setup is rarely used. Use the setup shown at the top of the page.





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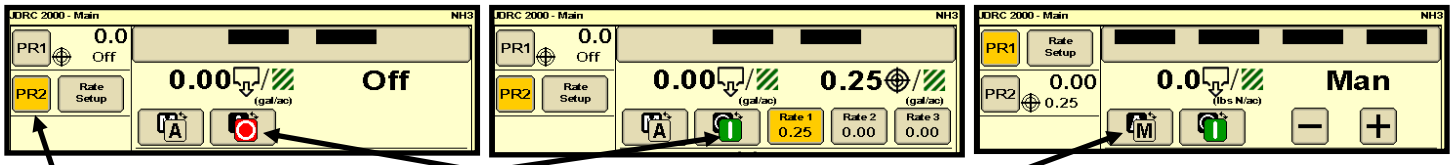
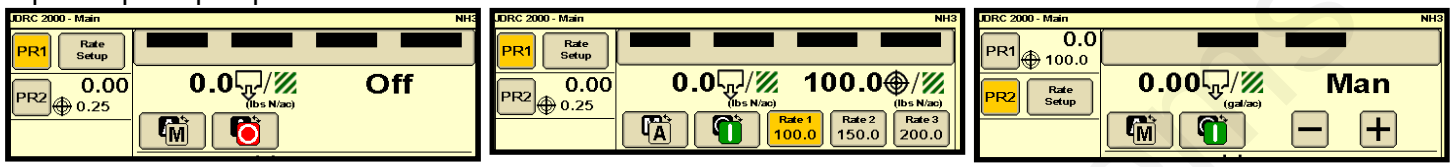
Main run screen: PR1 will be NH3. PR2 is the NutriSphere NH3 liquid.



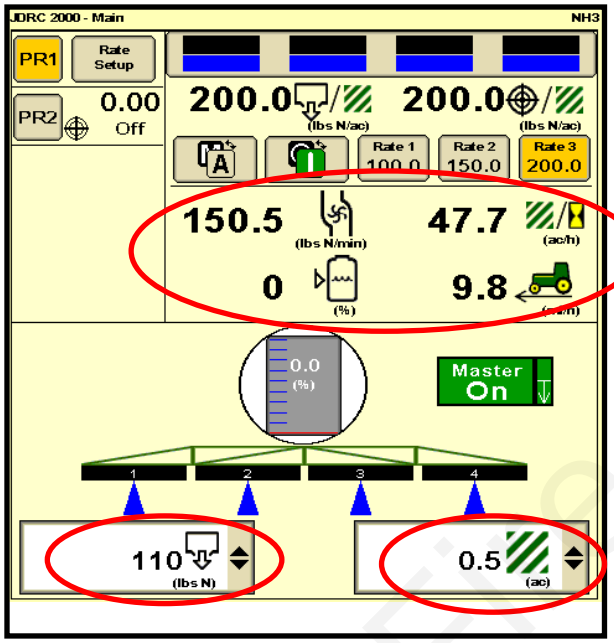
Select PR2 : Press here to turn PR2 ON or OFF. Press here for Auto or Manual Rate control.

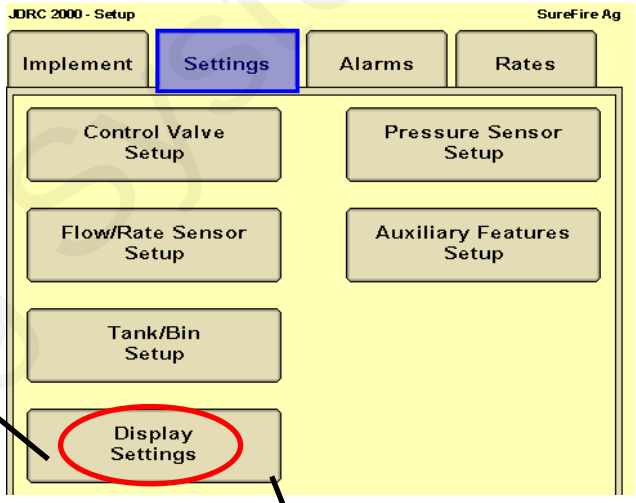
When in Manual Rate Control press the (-) or (+) button to decrease or increase pump speed.

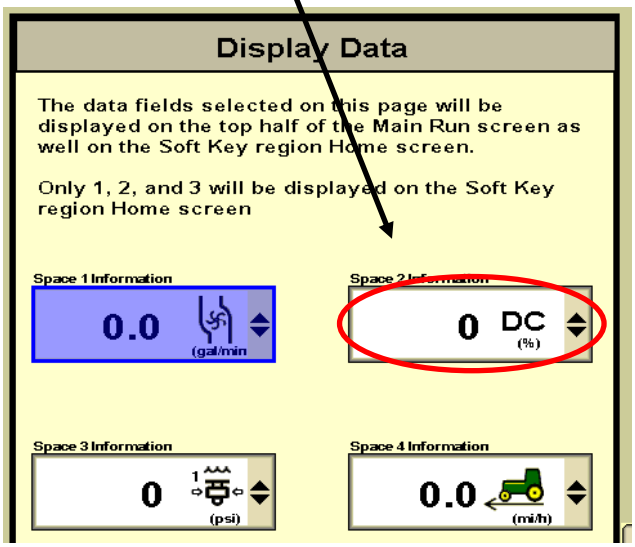
To test the system, enter a Test Speed and turn on PR2 and turn it on in Manual mode. Press **(+)** to speed up the pump



Below: Run screen showing NH3 application.





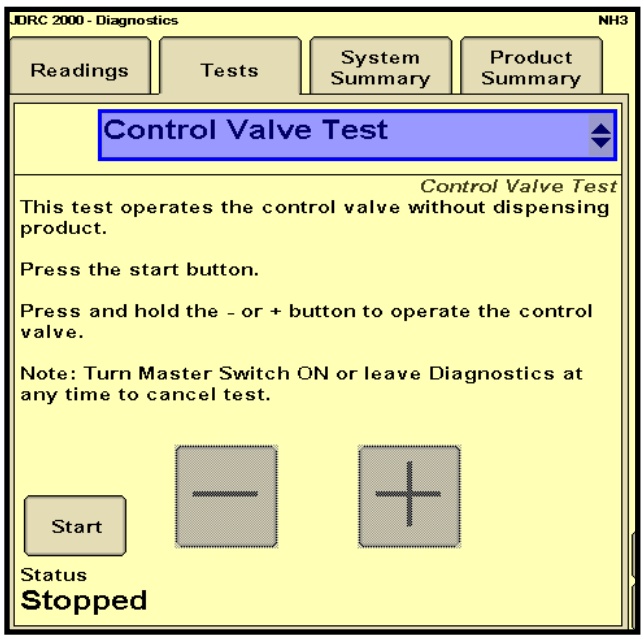


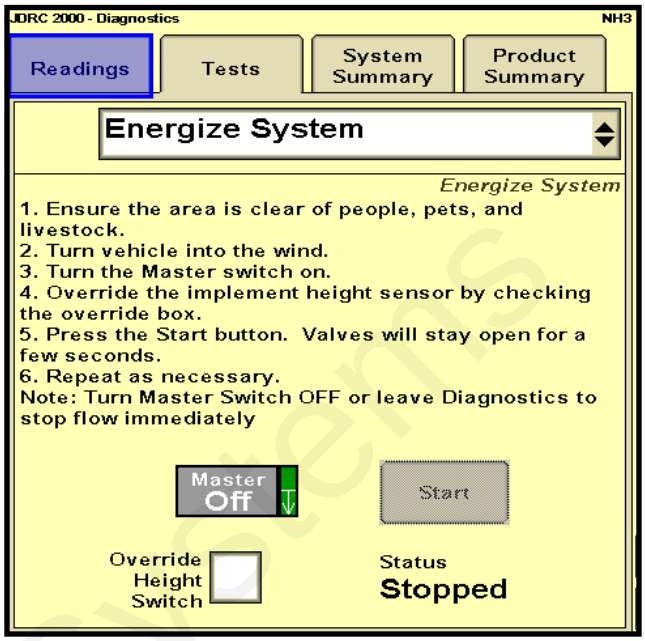
For a Liquid Product, set up one of the 4 upper display settings or one of the two bottom display boxes with **"DC"** to show the PWM Duty Cycle.

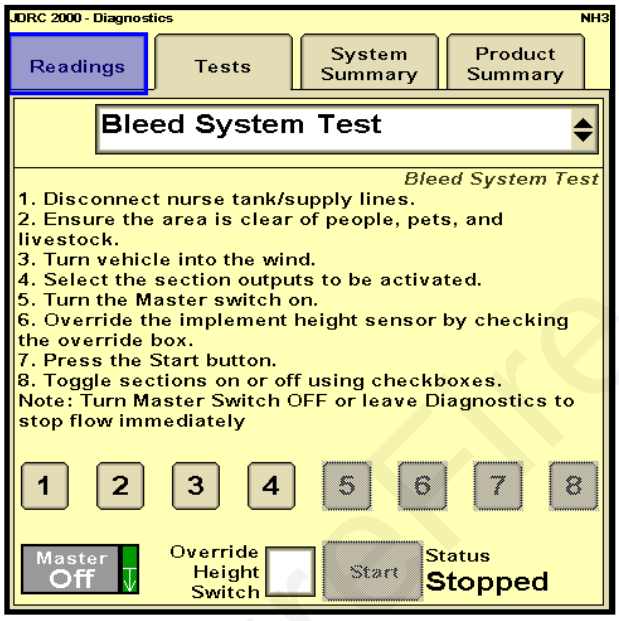
SureFire Ag Systems

System Startup

Diagnostics > Tests These are the tests available for Product 1—NH3.
Be certain it is safe to release NH3 before running any of these.

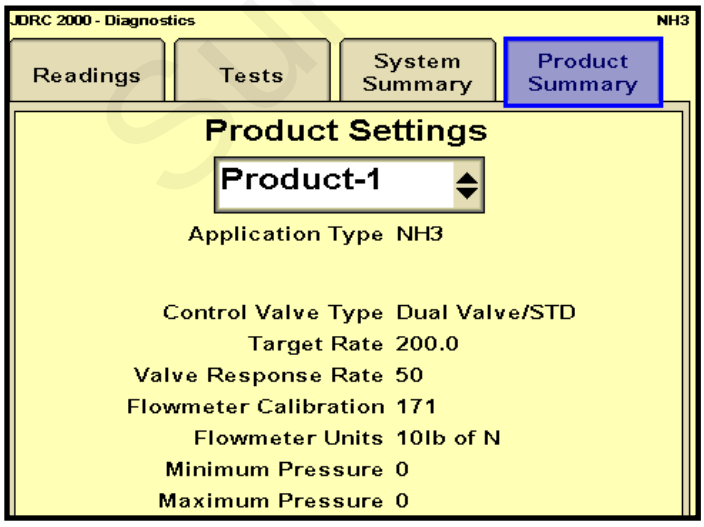


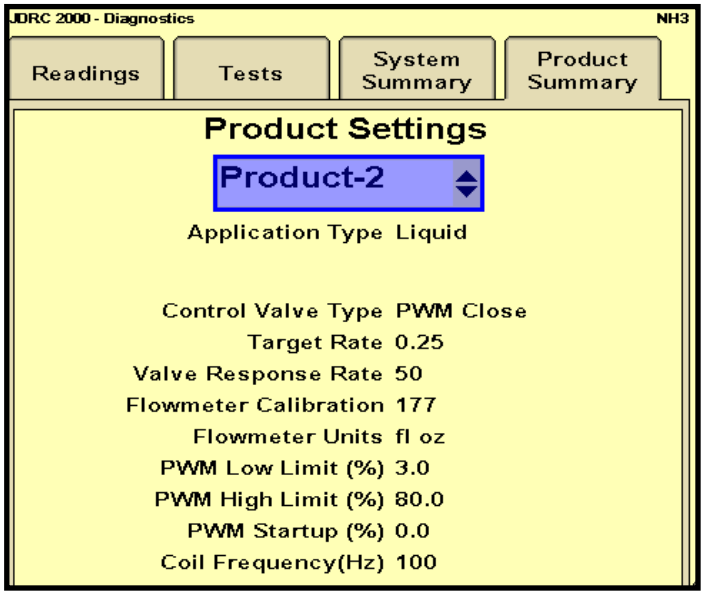




See the John Deere Rate Controller 2000 Operator's Manual for complete information on the setup and operation of the system.

Product Summary screens will show your setup.



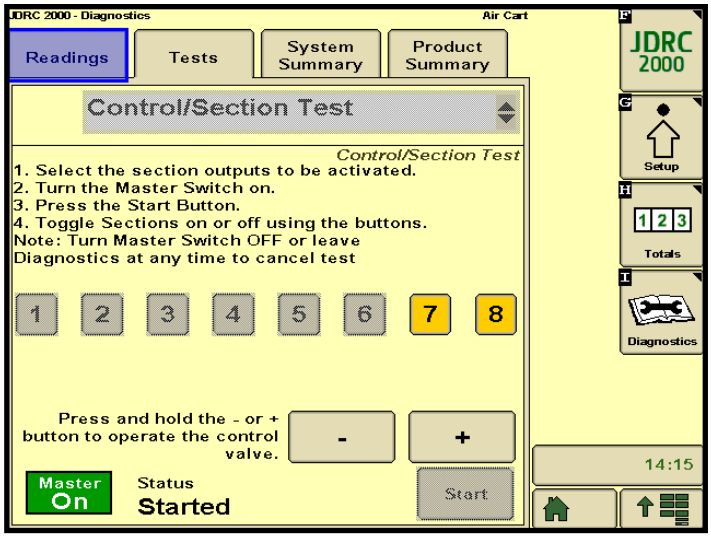


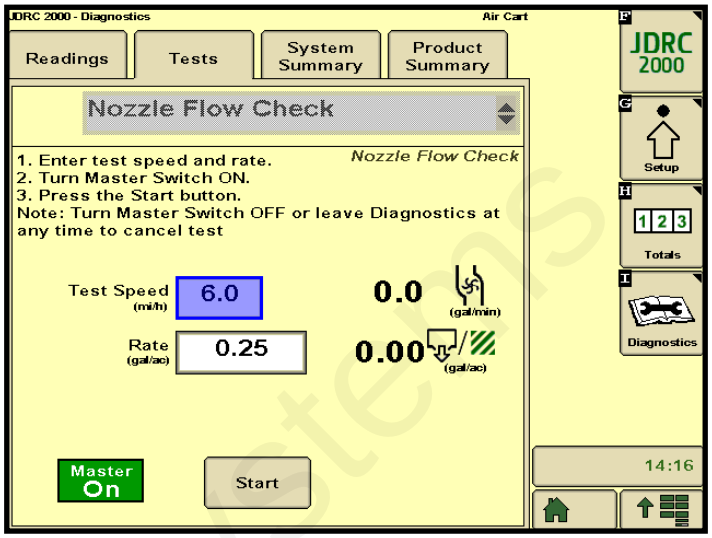
SureFire Ag Systems

Screenshots from Diagnostics > Tests (For the Liquid Product—Product 2)

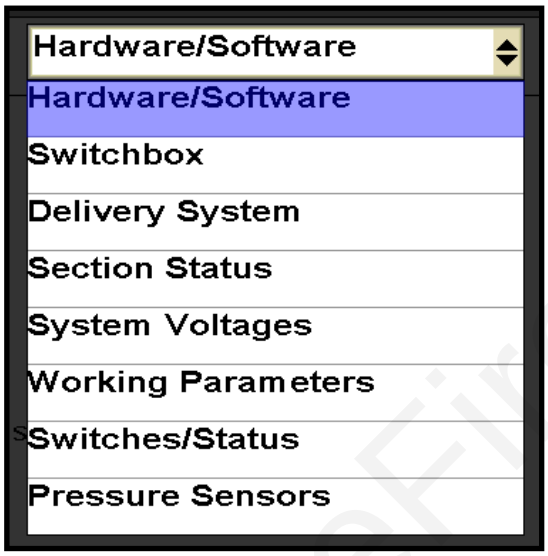
System Startup

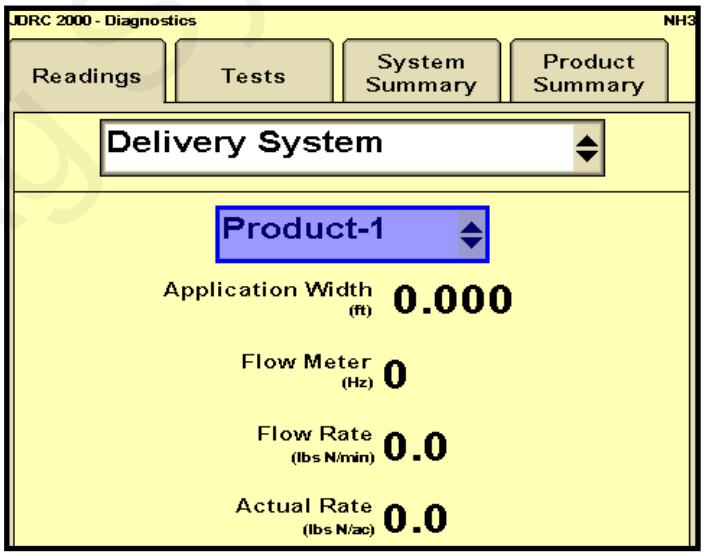
Control/Section Test and Nozzle Flow Check are good tests to run on initial system startup. If testing with water, the pressure will be much less than it will be with the NutriSphere NH3 product.

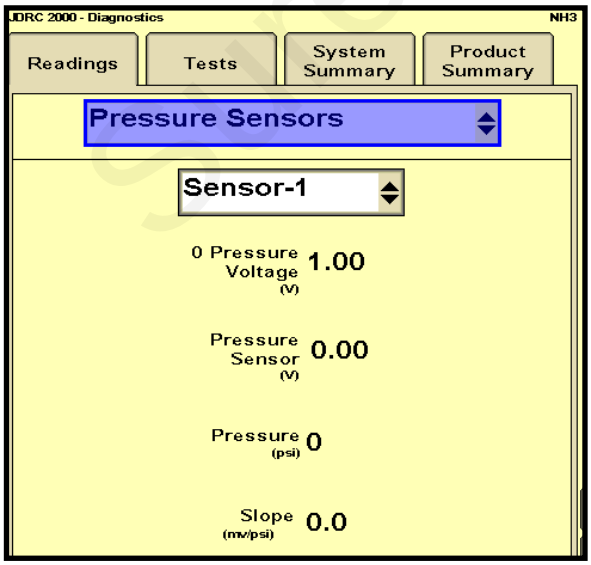


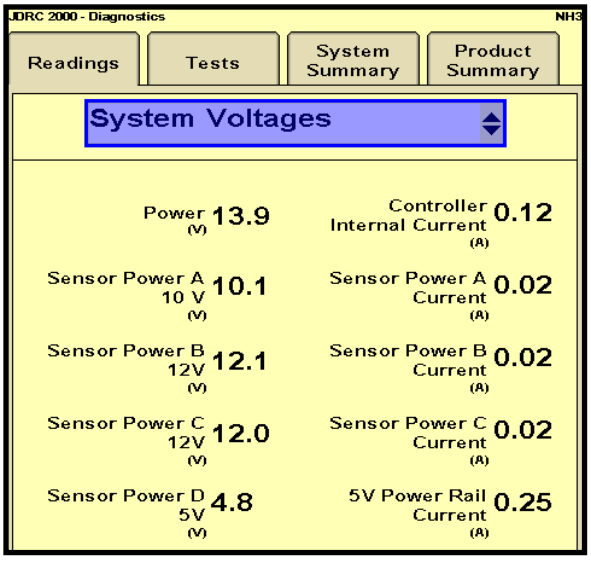


Screenshots from Diagnostics > Readings (These can provide helpful troubleshooting information)





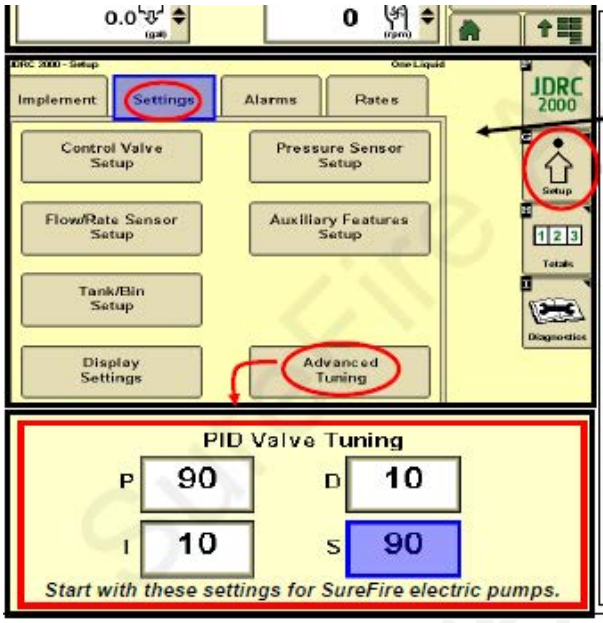




SureFire Ag Systems

For full instructions on the setup and operation of the JDRC 2000 see the John Deere Rate Controller 2000 Operator's Manual.

Additional Setup Information.
It may be necessary to use the Advanced Tuning feature to get the electric pump to respond more quickly to speed or rate changes.



16. Advanced Tuning

On SureFire **electric pump systems** (Tower 110, Tower 200, Catalyst, and Spartan), 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.

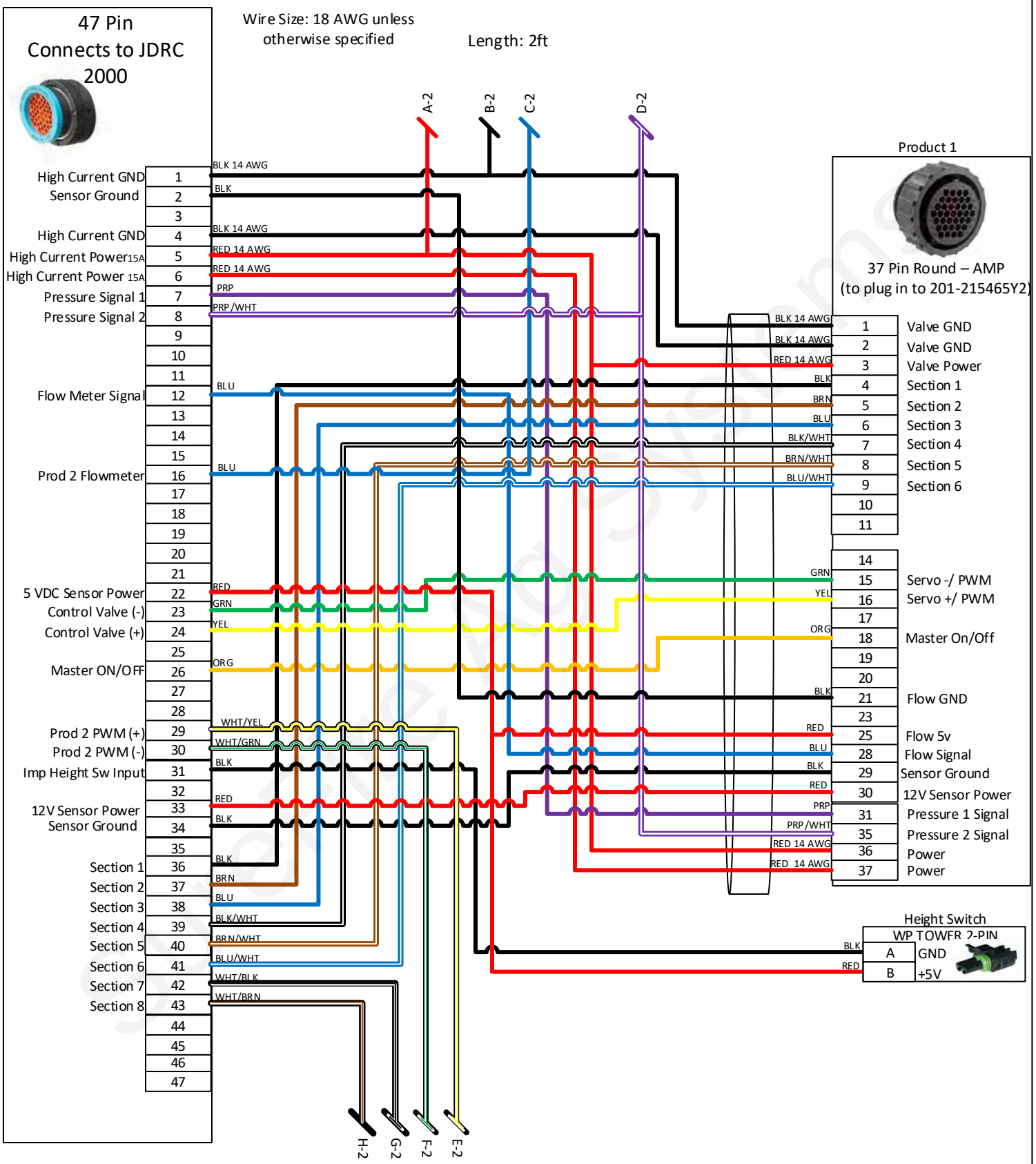
For quickest response on Tower 110 systems set P = 100 and S = 100.

Do not use Advanced Tuning on SureFire hydraulic pump systems.

SureFire Systems

201-3426Y1

JDRC 2000 47-pin to 2 products (Prod 1 37-pin with Sect 1-6, Prod 2 8-pin Deutsch, Sect 7-8)



Part No:	201-3426Y1	Drawn By:	Mark Wolters
Description:	JDRC 2000 47-pin to 2 products (Prod 1 37-pin with Sect 1-6, Prod 2 8-pin Deutsch, Sect 7-8)	Last Edit Date:	10/14/2016 2:30:56 PM
		Revision	Rev A-01
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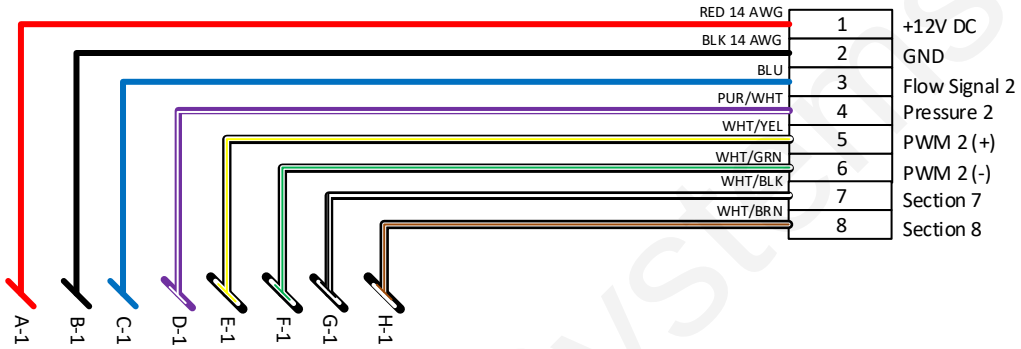
201-3426Y1

JDRC 2000 47-pin to 2 products (Prod 1 37-pin with Sect 1-6, Prod 2 8-pin Deutsch, Sect 7-8)

Connects to 207-3427Y1

Pump

DEUTSCH 8-pin DT04-08P



SureFire Ag Systems

REVISIONS

A-01 Original Drawing

SureFire Ag Systems	Part No:	201-3426Y1	Drawn By:	Mark Wolters	
	Description:	JDRC 2000 47-pin to 2 products (Prod 1 37-pin with Sect 1-6, Prod 2 8-pin Deutsch, Sect 7-8)	Last Edit Date:	10/14/2016 2:30:56 PM	Revision: Rev A-01
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207-3427Y1

8-pin final pump harness for Catalyst

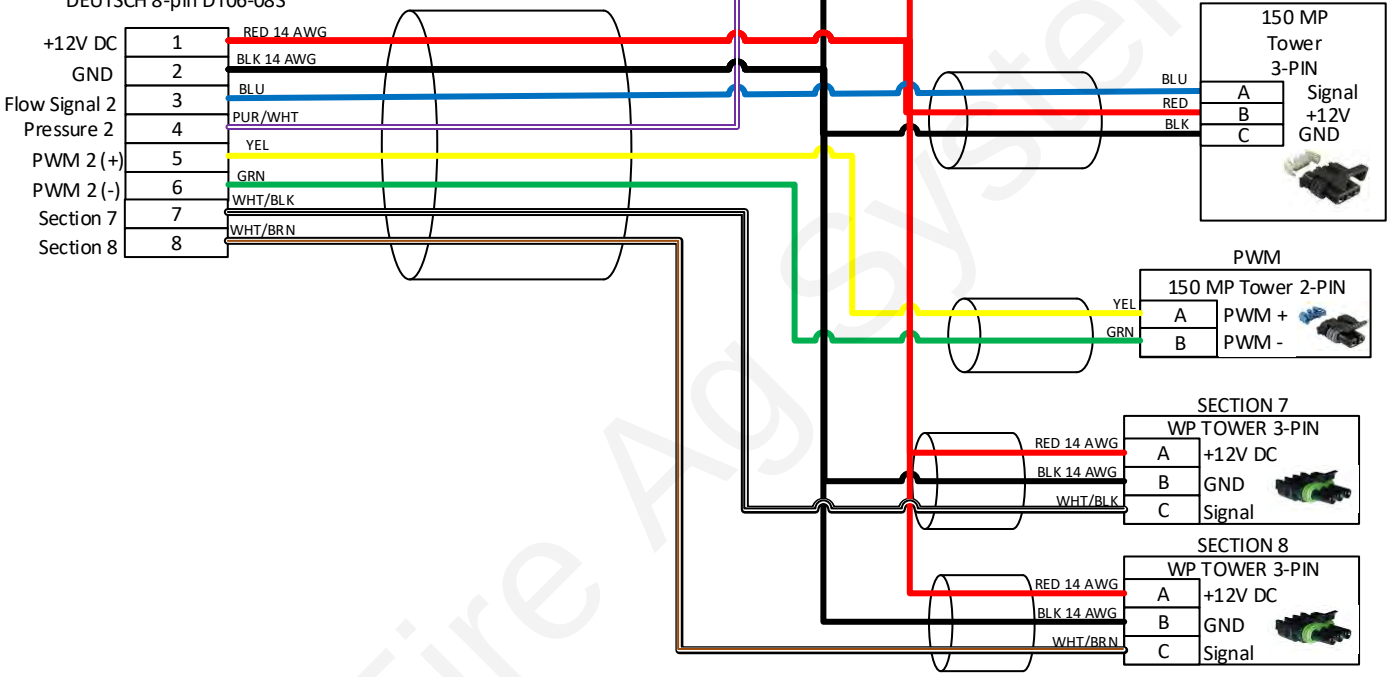
10 ft.

Wire 18AWG unless otherwise specified

Connects to 201-3426Y1

Pump

DEUTSCH 8-pin DT06-08S



SureFire Ag Systems

SureFire Ag Systems	Part No:	207-3427Y1	Drawn By:	Mark Wolters	
	Description:	8-pin final pump harness for Catalyst	Last Edit Date:	10/14/2016 2:25:23 PM	Revision A-01
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