



396-4761Y1 QuickStart Card



JDRC 2000 Gen3 LiquiShift for 1 Product

Below are typical SureFire Liquid Fertilizer System setup screens. *Your setup may vary. Not all screens are shown.*

NOTICE

The operator must read the John Deere JDRC 2000 Operator's Manual and the SureFire manual that came with your system for safety information and additional setup/operating information.

1. Navigate to the Profile Setup

This card is a supplement to 396-3583Y1 and 396-4608Y1. See those manuals for more information on setup and operation.

For the 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 process. (*Setup tip: If a box is grayed out, the Master Switch may be ON. Turn it OFF.*)

2. Enter a Profile Name.

Select Profile
Select the Profile that you would like to load. If "New" is selected the Setup Wizard will begin and a new Profile will be created.

System Processing
Please wait while the JDRC 2000 loads.

3. Machine Type > Liquid Fert Tool

Name Profile

Profile Name: SureFire

Machine Type: Liquid Fert. Tool

Set width for your system.

Application Width: 60.000 ft

Software Version Number 1.13A

4. Select Application Mode > Liquid

Setup Application Type

Product 1 Liquid

Application Mode: Liquid

Application Mode-Liquid

Conventional liquid application. Application rate is entered and documented as Gallons/Acre (Liters/Hectare).

Check with Deere dealer for latest software for JDRC 2000 and display.

5. Set up Sections from table.

Setup Sections

Number of Sections: See Below

Section Valve Type: 3-Wire

Equal Width Sections:

Set up sections like this:

Rows	Sept	Rows	Sept
12	12	32	16
16	16	36	12
24	12	48	12

6. The SureFire pressure sensor will be set up as a Custom sensor. Calibration will be done later.

Setup Pressure Sensors

Pressure Sensor 1: Custom

Pressure Sensor 2: None

Setup Pressure Alarms

	Minimum	Maximum	Alarm?
Pressure 1 (psi)	0	85	<input checked="" type="checkbox"/>
Pressure 2 (psi)	0	0	<input type="checkbox"/>

NOTICE

Set up Pressure Alarms

For a hydraulic pump setup, set the Maximum Pressure at 85 PSI and check the Alarm box. This will keep the pump from over-speeding if there is a restriction.

If Minimum and Maximum numbers are entered and the Alarm box is checked, those pressures will become control limits, and the system will not go below or above those limits.

Most fertilizer systems will not need a Minimum Pressure Alarm.



QuickStart setup instructions for JDRC 2000 (1 Product) and Gen3 LS

7. Complete Aux Functions Setup

Setup Aux Functions

Agitator Valve Installed

Agitator Duty Cycle (%)

Flow Return Installed

Optional Height Switch

8. Control Valve Setup (use the numbers indicated for your system)

Valve Response Rate: (Adjust as needed)
 PumpRight (hydraulic) PR17 - 80 PR30 - 70 PR40 - 60
 D250 - 50

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

Setup Control Valve

Product 1 Liquid

Control Valve Type

See Above Valve Response Rate (1-100)

Control Deadband (%)

Low Limit (Adjust in field as needed)
 PumpRight (hydraulic) **25**
PWM Startup (Adjust in field as needed)
 PumpRight (hydraulic) **35-40**

Setup PWM

Product 1 Liquid

Coil Frequency (Hz)

High Limit may be set lower to limit speed of pump

Low Limit (%)

PWM Startup (%)

9. Enter appropriate Flowmeter Cal.

Setup Rate Sensor

Product 1 Liquid

Flowmeter Calibration

Flowmeter Pulse/Units

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

10(a). Tank and Fill Flowmeter setup

Setup Tank

Product 1 Liquid

OPTIONAL: Use as desired

Tank Capacity (gal)

Current Level (gal)

Low Tank Level (gal) Alarm?

Tank Fill Monitor

Check **Tank Fill Monitor** box if using a fill flowmeter (not used very often). Then enter **Tank Fill Flowmeter Cal.**

Verify the flowmeter calibration by carefully comparing acres worked and gallons applied in the field. Adjust flowmeter calibration as needed for accurate measurement.

10(b). Fill Flowmeter Cal setup

Setup Tank Fill

SFA 3" Fill Flowmeter

SFA 2" Fill Flowmeter

Tank Fill Flowmeter Calibration

OPTIONAL: Use as desired

Tank Fill Flowmeter Pulse/Units

This QuickStart Card is a supplement to the full system manual (396-3583Y1) and the Gen3 LiquiShift Manual (396-4608Y1). Find these at www.surefireag.com/support.



The operator is responsible for the safe operation of this equipment. Systems with hydraulic equipment require additional safety precautions to prevent serious injury and/or death.

11. Set Rates and Rate Smoothing

JDRC 2000 - Setup SureFire Liqui

Implement Settings Alarms Rates

Product-1

Preset Rate Values (gal/ac)

Rate 1	Rate 2	Rate 3
<input style="width: 50px;" type="text" value="3.0"/>	<input style="width: 50px;" type="text" value="5.0"/>	<input style="width: 50px;" type="text" value="8.0"/>

Rate Bump (gal/ac) Rate Selection

Rate Smoothing %

Decimal Shift

Enter **Preset Rate Values**

Rate Selection — usually Predefined. Map-Based if applying from a prescription map.

Decimal Shift is typically set at 1. Set at 2 for Rate like 0.25 gpa. Can be set at 0 for higher rates (above 30 gpa)

12. Set Off Rate Alarm as desired.

Setup Alarms

Product 1 Liquid

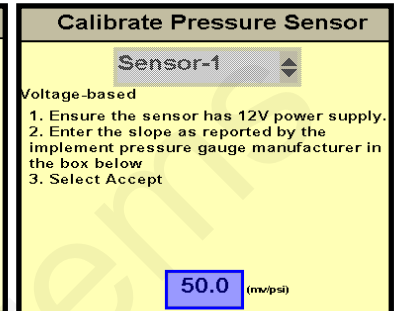
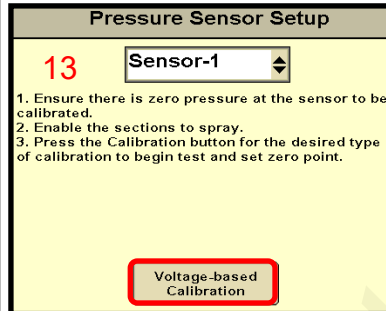
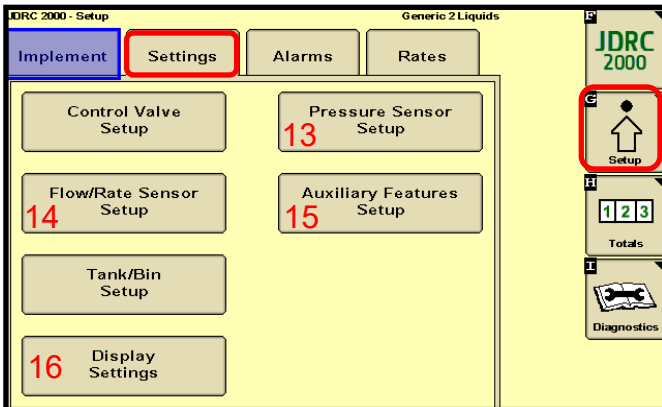
Off Rate Alarm (% off target rate) Alarm?



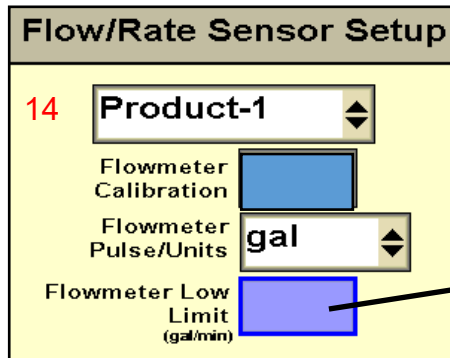
QuickStart setup instructions for JDRC 2000 (1 Product) and Gen3 LS

13. Pressure Sensor must be calibrated. Enter **50.0 mv/PSI** for SureFire 0-100 PSI, 0 to 5 volt sensor. (Unplug the sensor during the calibration process.) Put the Pressure Sensor reading in your Display Settings on the Run Screen.

Go to **Diagnostics > Readings > Pressure Sensors**. 0 Pressure Voltage should be 0.00 V. If pressure is running above 85 PSI check metering tube size and be sure both LiquiShift valves are opening.



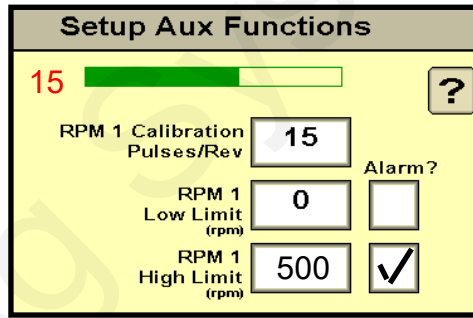
14. Set **Flowmeter Low Limit**



Flowmeter	Low Limit
0.6 to 13	0.4
1.3 to 26	0.8
2.6 to 53	1.6

15. Set up Pump RPM sensor

The pump is rated at 540 RPM.

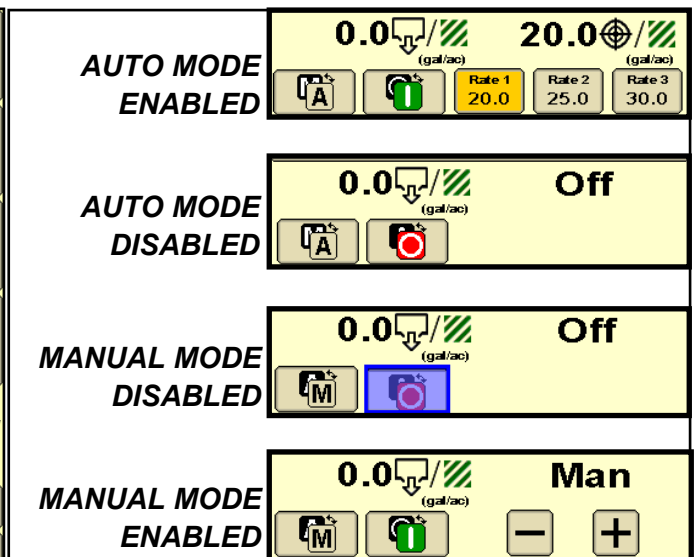
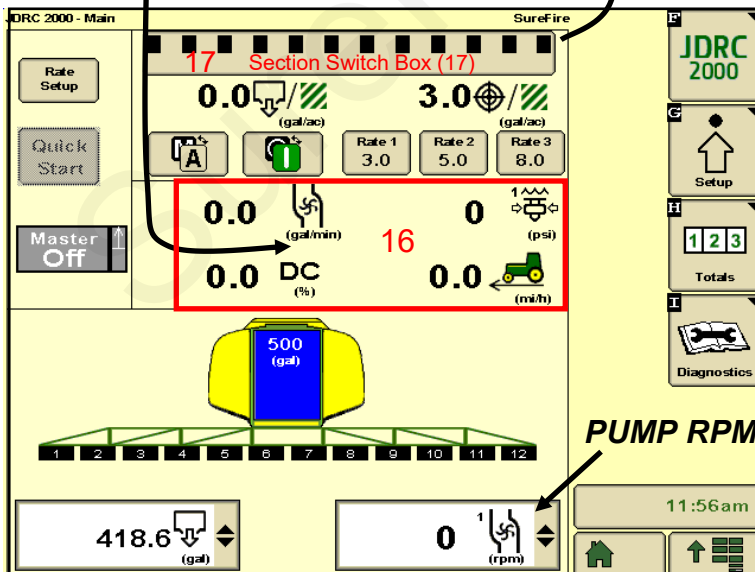
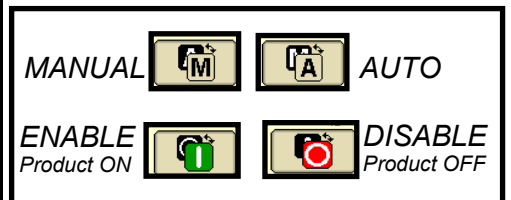
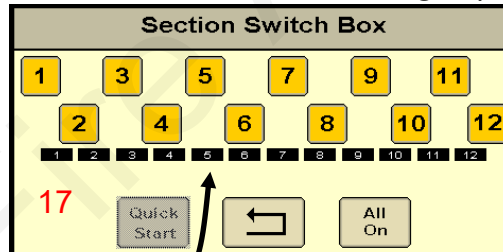


If pump suddenly needs more RPM to reach output, check for restrictions on the inlet side.

Display Settings, Section Switch Box, Run Page (Manual/Auto, Enable/Disable)

16. Set these 4 items in Setup > Settings > Display Settings

- Gal/min 16
- Pressure (PSI-1)
- DC(%) (PWM Duty Cycle)
- Mi/hr



Tests for Initial Operation

17. Initial Operation in MANUAL mode:

1. Fill the system with water. For first time startup, open air bleed valve.
2. Enter a Test Speed at Setup > Implement > Test Speed.
3. Navigate to MANUAL MODE on the JDRC 2000 Run page.
4. Height switch must be DOWN (or uncheck Height Switch box).
5. Turn on Master Switch. Press and hold (+) to increase flow. If you get "SOLUTION PUMP DRY", see next box below.
6. Monitor Flow (gal/min), PSI, DC, Pump RPM. Only Valve A will be on unless pressure exceeds 70 PSI. Open Valve B with the manual toggle switch by the valve.
7. Go to Section Switch box (see previous page). Turn Sections OFF and ON. Setup > Implement >
8. Turn Master Switch OFF.

NOTICE

Running these tests will dispense liquid. Be sure it is safe to dispense the liquid at this time.

Height Switch

Test Speed 

OPTIONAL MANUAL PUMP OPERATION: If you get "SOLUTION PUMP DRY", start with this:

"Solution Pump Dry" will not hurt the SureFire pump.

Go to **Diagnostics > Tests > Calibrate PWM LIMITS**. This is a place where you can manually run the pump without the system shutting down if it doesn't read flow immediately. When you press START, the section valves will open. Press and hold (+) to increase the PWM Duty Cycle. Hydraulic pumps will need to be around 30% DC to get flow. When priming the pump, it will help to open the air bleed valve and run the pump faster to get it primed and to get the air out.

You can also run the system manually at **Diagnostics > Tests > Control/Section Test**. When running the system here, you will get a *Solution Pump Dry* warning if the system doesn't read flow. This will not hurt the SureFire pump.

TROUBLESHOOTING TIP: Pump Won't Run—Start the Calibrate PWM Limits Test. Press and hold the (+) button to run the PWM Duty Cycle (DC) to 100%. With a voltmeter check voltage at the 2-pin PWM connector. Should have 12-13 volts. If there is voltage here, but pump won't run, check the pump as described next:

Hydraulic Pump—On the hydraulic valve block, pop up the Manual Override button (red knob on top of solenoid). If unit has been in the field, you may need to loosen the dirt to move the knob. In cab, turn hydraulic flow to very low. Engage hydraulics. Pump should begin turning. Slowly increase hydraulic flow to speed up pump. Do not overspeed pump. When finished testing, lock the Manual Override button in the down position for field operation.

18. Initial Operation in AUTO mode: (Could also do **Diagnostics > Nozzle Flow Check**).

1. Enter a Test Speed at Setup > Implement > Test Speed.
2. Navigate to AUTO MODE on the JDRC 2000 Run page. Select a Rate.
3. Height switch must be DOWN (or uncheck Height Switch box).
4. Turn on Master Switch. (**NOTE: Pressure will be much less with water than with heavier, thicker fertilizer.**)
5. Monitor Actual Rate (gal/ac), Flow (gal/min), PSI, DC, Pump RPM.
6. Go to Section Switch box (see previous page). Turn Sections OFF and ON.
7. Turn Master Switch OFF.

Check out the other tests available at **Diagnostics > Tests**. Check out system information at **Diagnostics > Readings >**

TIPS: (1) Go to **Diagnostics > System Summary** for a quick look at the System Settings.

(2) Go to **Diagnostics > Product Summary** for a quick look at the settings for each product setup.

(3) Go to **Diagnostics > Readings** for important information and feedback: *Hardware/Software, Delivery System, Section Status, System Voltage, Pressure Sensors, RPM Sensors and more.*

(4) See the *JDRC 2000 PumpRight System Manual (396-3583Y1)* and *Gen3 LiquiShift Manual (396-4608Y1)* for more information on safety, setup, and operation. Available at www.surefireag.com/support.

WARNING

The operator is responsible for knowing and understanding the safe operation of this equipment. Systems with hydraulic equipment require additional safety precautions to prevent serious injury and/or death. See the full SureFire Manual and the *John Deere Rate Controller 2000 Operator's Manual* for important safety information and setup and operating instructions. Go to www.surefireag.com/support for the SureFire manual.

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