

# 396-3101Y1 QuickStart Card



**SureFire PumpRight Hydraulic Pump System**  
with PWM control for **JD GreenStar Rate Controller (GRC)**  
Supplement to 396-001070

The following screenshots show the setup settings that are typically good initial settings. Actual settings on your system may vary from those shown here. Adjust settings as necessary in the field to get the best operation from your system. For more complete system information see the full manual for this system (396-001070) available at [www.surefireag.com](http://www.surefireag.com).

**WARNING** Operator is responsible for the safe operation of this system. Follow all safety precautions for safety with hydraulic equipment. Read the manual.

## Setup-Implement

Set up Height Switch as appropriate for this system.  
Some systems may not use a height switch.



## Setup-System

**Flowmeter Cal—2000 Flowmeter Units—gal**  
For SureFire Electromagnetic Flowmeter - Verify calibration. Adjust as needed

## PWM Setup

## Calibrate Pressure Sensor

**Pre-season Service —See the manual for important pre-season service tips.**

**Troubleshooting Tips—See the manual (Section G) for more troubleshooting tips.**

- To check for proper hydraulic connections and operation:** (See page 43 in manual) Turn hydraulics off. Go to the SureFire hydraulic valve and open the manual override (red knob) on top of the electric coil. Turn the hydraulic on at a low flow rate (since the valve is 100% open in manual override.) Gradually increase hydraulic flow. Pump should turn if hydraulic flow is present and connected correctly.
- To get pump to Target Rate quicker on startup:** (1) Increase the LOW LIMIT on PWM Settings (to 70 or 80). (Caution: Pump will not slow down below LOW LIMIT. (2) Increase the first 2 digits of Control Valve Calibration (from 20 to 25 or 30). This may cause the pump to overshoot and oscillate on speed or rate changes across the field.



## Setup - Alarms

GreenStar Rate Controller - Setup

Implement System **Alarms** Rates

Low Tank Level (gal)  Alarm? ☐

High Alarm (% above target rate)  ☒

Low Alarm (% below target rate)  ☒

Pressure Sensor 1

Minimum (psi)  Alarm? ☐

Maximum (psi)  ☒

1:22pm

Setup

## Setup - Rates

GS2 Rate Controller - Setup

Implement System Alarms **Rates**

Rate 1  gal/ac Minimum Flow Rate  gal/min

Rate 2  gal/ac

Rate 3  gal/ac

Optional Minimum Flow: 0.6—13 GPM 0.4—2.0 gal/min

Rate Smoothing ☒  %

Setup

## Diagnostics-Tests-Section Test

GS2 Rate Controller - Diagnostics

Readings **Tests**

Test **Section Test**

1. Select the section outputs to be activated.  
2. Turn the Master Switch on.  
3. Press the Start Button.  
4. Toggle Sections on or off using the checkboxes.  
Note: Turn Master Switch OFF at any time to cancel test.

1 ☒ 2 ☒

SCAN for video on Diagnostics > Tests

Press and hold the - or + button to operate the control valve.

Master On Status Started

Start

## Diagnostics-Tests-Nozzle Flow Check

GreenStar Rate Controller - Diagnostics

Readings **Tests**

Test **Nozzle Flow Check**

1. Enter test speed and rate.  
2. Turn Master Switch ON.  
3. Press the Start button.  
Note: Turn Master Switch OFF at any time to cancel test.

Test Speed (mph)  32.0 gal/ac

Rate (gal/ac)  10.0 psi

11.9 gal/min

Master On Start

**Section Test or Calibrate PWM Limits** can be used for manual operation of the system. **Calibrate PWM Limits** is good to prime the pump on startup, to rinse the system, and for troubleshooting.

Use **Nozzle Flow Check** to see if system will lock on to a rate at a test speed. Pressure with water will be a lot lower than it will be with a heavier product. Some check valves may not open with low pressure.

**Diagnostics—Readings—Delivery System** will show details on flowmeter operation and pump speed (PWM Duty Cycle). This can be useful information for troubleshooting. Look at this screen.



## Flowmeter Troubleshooting and Tap Test

1. Unplug flowmeter. With voltmeter, check for 12 volts between Power and Ground (pins 1 & 2 or pins B & C) of flowmeter connector. If no voltage, check at each connection back to Rate Controller. Should have 4-5 volts between Signal and Ground (pins 1 & 3 or pins A & C).
2. If 12 volts is present, then conduct a **tap test**. Have a second person watch **Flow Meter (Hz)** on the **Diagnostics > Readings > Delivery System** screen while other person taps repeatedly (use a short piece of wire or a paper clip) between Signal and Ground (pins 1 & 3 or A & C) of flowmeter connector. Taps should register on display.
3. If GS2/GS3 responded to the tap test, your wiring to that point is good. If still not fixed, inspect adapter harness and test continuity at each connection per schematic (see Section D of system manual).
4. Consider cleaning inside tube of flowmeter with warm soapy water. Replace flowmeter if it is still not working.

## Electric Section Valve Problems

1. If one valve is not working, switch connections from that valve with a valve that is working to see if the problem is with the valve or with getting power/signal to the valve. If valve indicator light is always green or if position indicator appears out of sync, replace actuator. If valve won't turn, remove actuator and turn valve manually to loosen it.
2. All valves should have constant 12V power between pins A & B. When valve is commanded to turn on, there should be 12V between pins B & C. Start checking at the connection closest to the valve and work back to the Rate Controller. (See wiring pinouts in main manual.)
3. If using Auto Section Control, be sure the controller doesn't think you are in an area already covered or out of bounds. Use the Section Test to open and close valves.

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