

My Rate is Bouncing All Over and Won't Lock In

****Observations to Make:**

Is the flow really changing? Watch the red balls, watch the output at the row, watch the pressure, watch and listen to the pump. Do these observations go along with the bouncing rate that the screen is showing? Each of these observations is important and may lead to a solution.

If you have the ability to do so with your system, watch the PWM Duty Cycle, Pump RPM, Pressure, and Flow on the screen.

- (1) (a) Run a manual test such as Calibrate PWM Limits or Section Test (where you can lock in a PWM Duty Cycle). Will the flow lock in with the control valve at a set position? Use the (+) and (-) buttons to try the pump at different speeds. If the flow locks in here, try number 2.
 - (b) Run a manual test by putting the solenoid valve in manual override position (pop the red knob up) and controlling the pump by adjusting the hydraulic flow in the cab. Begin by starting a test to open the valves. Start with the hydraulic flow at 10% and gradually increase the flow.
- (2) Lower the Valve Calibration number, Valve Response, or GAIN setting.
- (3) Be sure pressure is high enough that all the check valves are staying open all the time.
- (4) If rate is low, or if needed pump output is very low, open the recirculation knob to allow pump to run faster. If the recirculation is open too much, this also can cause rate fluctuation. If recirculating a lot, plumb the recirculation back to the tank.
- (5) Tighten ALL the clamps and inspect ALL the fittings from the tank to the pump. It could be a loose clamp, a loose bung or fitting that isn't screwed tight, a strainer housing that is loose or cracked. There could be a loose or cracked fitting on the pump or a bad o-ring. User will insist there are no leaks. Most times there are NOT visible liquid leaks. Pumps have tremendous suction. If there is the slightest place for air to be sucked in, it will be sucked in, and it will make the flowmeter jump all over the place. User will not want to do this, but many times the issue will not be fixed until they do.
- (6) There could be a problem with the flowmeter or with the harnessing from the Rate Controller to the flowmeter. Run a test sitting still and twist and pull on all the connectors from the flowmeter to the rate controller. Take the connectors apart and visually inspect and clean the pins. There can also be unseen corrosion on the strands of wire connected to the pins or terminals. Old flowmeters can also start pulsing erratically.
- (7) Don't replace the flowmeter until item #5 above has been done.
- (8) Rate bouncing could be caused by a sticky PWM Proportional valve or a bad solenoid on the hydraulic valve block or a bad hydraulic motor on the pump. Consider if it is contaminated oil intermittently plugging the PWM valve. Consider tractor hydraulic issues when everything is running.