

LIQUID PUMP SETUP FORM



Customer Name: _____

Planter Make/Model: _____

of Rows: _____ Row Spacing: _____

Liquid System Name: _____

Type of Product Used: _____

SYSTEM SETUP DETAILS

Pump/Motor Model: _____

Maximum Pump GPM Rating: _____ @ _____ PSI

Section or RxR Setup: _____

Jumper Color for HD: _____

Jumper Color for Monitoring FlowSense (if applicable): _____

System Pressure Setting at the Bypass: _____ PSI @ _____ PWM %

LIQUID RATE DETAILS

Maximum Gallon Per Acre Rate: _____ **Minimum** Gallon Per Acre Rate: _____

Maximum Speed: _____ MPH **Minimum** Speed: _____ MPH

Using the Manual Health Check, determine the best PWM % for both of these planter wide GPM.

Pump Cal **Min** Duty Cycle: _____ %

Pump Cal **Max** Duty Cycle: _____ %

USEFUL EQUATION: $(GPA \times MPH \times Row \ Spacing) / 5940 = GPM \ Per \ Row$

Minimum GPM/Row: _____ X Number of Rows: _____ = **Minimum Planter GPM** _____

Maximum GPM/Row: _____ X Number of Rows: _____ = **Maximum Planter GPM** _____

For in-field diagnostic purposes, measure the pump RPM at desired PWM percentages using a voltmeter and shaft speed sensor if applicable.

USEFUL EQUATION: $(Hertz \ Reading / Pulses \ Per \ Revolution) \times 60 = Pump \ RPM$

(Precision Planting's Shaft Speed sensor is set at 100 pulses per revolution)

Pump RPM at **Maximum** PWM % : _____

Pump RPM at **Minimum** PWM % : _____

Rate Control Settings	Application Use	Calibrated Settings	Setting Description
		(fill in for your system)	
Liquid Ratio	Base System only		Amount of output gallons per pump revolution. (Run a Pump Calibration test to find this number).
.002 gal/rev			
Motor Ecoder	Pump Safety Setting		Amount of Pulses from Shaft speed sensor per revolution of the pump. Labeld on sensor.
100 Pulses/rev			Also used and required for Pump Control only on vApply Base
Pump PWM Frequency	Pump Safety Setting		Frequency of PWM solenoid. Default of 150Hz will work for most systems.
150Hz			
Duty Cycle Control Setpoint	HD In-field Control		PWM% controlled to when control style is set to <i>Constant PWM</i> , or when <i>W/HOLD</i> is selected.
25%			w/hold will run at Duty Cycle Control Setpoint when system is not applying.
PWM Control Style	HD In-field Control		3 styles of control. Constant PWM, Pump Cal, Pump Cal w/ Hold.
Pump Cal			Pump Cal and Pump Cal w/ Hold will use next 4 settings to control when applying.
Pump Cal Min Duty Cycle	HD In-field Control		Pump will run at this Duty Cycle % when commanded Planter wide rate is at or below Pump Cal Min Rate
15%			
Pump Cal Max Duty Cycle	HD In-field Control		Pump will run at this Duty Cycle % when commanded Planter wide rate is at or above Pump Cal Max Rate
50%			
Pump Cal Min Rate	HD In-field Control		Minimum planter wide Gal per minute rate determined by minimum target Gal/acre, speed
1 gal/min			
Pump Cal Max Rate	HD In-field Control		Maximum planter wide Gal per minute rate determined by Maximum target Gal/acre, speed
10 Gal/min			
Max Pump Pressure	Pump Safety Setting		Pump will not exceed this Pressure setting if Liquid Pressure Sensor is installed
60PSI			
Motor Control Gain	Pump Safety Setting		DO NOT CHANGE THIS SETTING (unless instructed to do so by Product Support)
1			
Minimum Duty Cycle	Pump Safety Setting		Threshold the pump will not run slower than this number
25%			Only pertains to health checks or if Pump Cal Minimum Duty Cycle is set lower
Maximum Duty Cycle	Pump Safety Setting		Threshold the pump will not run faster than this number
95%			Only pertains to health checks or if Pump Cal Maximum Duty Cycle is set higher
Pressure Source	Pump Safety Setting		Determines if System looks at vApply Base Module or Liquid PressureModule for System PSI
Internal			
Max Pump Speed	Pump Safety Setting		Pump Motor will not exceed this RPM (only applies to systems with Shaft Speed Sensor installed)
450 Rev/min			