Preliminary notes on using SureFire PumpRight PR Hydraulic Pumps with vApply HD: 05/24/2019

Without taking precautions to control the speed of the pump, you may cause damage (major damage) to the pump and to the other components of the system.
The pump is rated at 500 RPM. Given adequate oil and unlimited PWM Duty Cycle, the pumps may spin up to 700 RPM (or more). Because they are positive displacement pumps, the pump output continues to increase as the RPM increases. This output is not necessary to meet the flow requirements to the rows, so a big percentage of it is being recirculated. If this recirculation is directed back to the pump inlet, the inlet is being slammed with high velocity, high pressure, high volume flow that will damage (or destroy) the inlet valves. Also, much of this recirculation is through the pump PRV, so the flow has a hammer-like dynamic as the PRV spring actuates. (Even though the pressure limit on the vApply HD may be set to 80 PSI or less, the 100 PSI PRV may still be activated if the vApply HD recirculation plumbing cannot handle the flow being sent to it by a pump that is running too fast.)

In short, the speed of the pump must be limited to pump specifications (but that alone may not be sufficient).

The pump speed may also be limited by limiting the hydraulic flow with the in--cab hydraulic flow control. This is only possible if the pump is attached to its own hydraulic remote.
The recirculation impact may be lessened by plumbing all recirculation back to the tank and not to the pump inlet. This would include recirculation from the pump PRV.

Even with the pump spinning at rated RPM, there may be a very large recirculation flow. For example, a PR30 spinning at rated RPM in a scenario that calls for 10 gpm to the rows will have 20 gpm of recirculation flow. A PR30 spinning at 700 RPM will output approximately 40 gpm.

Before running the Pump Calibration, set the Maximum PWM Limit to 50%. Depending on PWM voltage, hydraulic flow and plumbing, the pump may reach maximum rated RPM at 55-60% PWM DC.

Advanced Setup
(Setup > Systems > vApplyHD > Advanced Setup).

Minimum/Maximum PWM

Minimum PWM / Maximum PWM - these are the two extremes for how open the PWM valve can be. The control will not exceed the maximum or minimum PWM command. The default setting is 0% to 95%. This is not the Min/Max PWM values from the pump cal. (?Set this to 50% MAX and 0-10% MIN for SureFire PumpRight pumps?)